Supreme Court, U.S.
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No. 06-

IN THE

Supreme Court of the United States

MALLINCKRODT INC.

Petitioner,

v.

MAINE PEOPLE'S ALLIANCE AND NATURAL RESOURCES DEFENSE COUNCIL, INC.

Respondents.

Petition for a Writ of Certiorari to the United States Court of Appeals for the First Circuit

PETITION FOR WRIT OF CERTIORARI

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QUESTIONS PRESENTED

1. Whether a mere non-imaginary risk that someone or something may be exposed to harm in the future can confer Article III standing when no federal or state agency has deemed the risk unacceptable and where a multi-year, multi-million dollar study must be conducted to determine whether prior releases of a hazardous substance are "posing an unacceptable risk to human health."

2. Whether the Resource Conservation Recovery Act's (RCRA) citizen suit provision, which authorizes suit only where a hazardous waste "may present an imminent and substantial endangerment to the health or the environment," authorizes a finding of liability and imposition of judicial relief based merely on a showing that such waste gives rise to a non-imaginary risk that someone or something may be exposed to harm.

PARTIES TO THE PROCEEDINGS

In addition to the parties named in the caption, HoltraChem Manufacturing Company, L.L.C. was initially a defendant in this action. HoltraChem dissolved as a corporate entity in March 2001, and has not participated in this litigation since that time.

Petitioner Mallinckrodt LLC is a wholly-owned subsidiary of its parent, United States Surgical Corporation ("USSC"). USSC is not publicly held, but its ultimate parent, Tyco International Ltd., is publicly held.

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PETITION FOR CERTIORARI

Petitioner Mallinckrodt LLC respectfully seeks a writ of certiorari to the United States Court of Appeals for the First Circuit in this case.

OPINIONS BELOW

The opinion of the First Circuit (Pet. App. 1a-36a) was entered on December 22, 2006, and is reported at 471 F.3d 277 (1st Cir. 2006). The order denying the Petition for Panel Rehearing and Rehearing en Banc (Pet. App. 70a-71a) was entered on January 16, 2007, and is unreported. The opinion of the United States District Court for the District of Maine (Pet. App. 40a-69a) was entered on July 29, 2002, and is reported at 211 F. Supp. 2d 237 (D. Me. 2002). The district court's orders entered August 10, 2005 (Pet. App. 37a-38a) and July 29, 2005 (Pet. App. 39a) are unreported.

JURISDICTION

The First Circuit entered its judgment in this case on December 22, 2006, and denied the Petition for Rehearing en Banc on January 16, 2007. On April 10, 2007, Justice Souter granted petitioner's timely application and extended the time for filing the petition to and including May 16, 2007. The jurisdiction of this Court is invoked pursuant to 28 U.S.C. § 1254(1).

CONSTITUTIONAL AND STATUTORY PROVISIONS INVOLVED

Article III, Section 2 of the United States Constitution provides that "The judicial Power shall extend to all Cases . . . [and] Controversies."

Section 6972(a)(1)(B) of Title 42 of the United States Code provides, in part, that a person may commence a civil suit

> against any person . . . including any past or present generator, past or present transporter, or past or present owner or operator of a treatment, storage, or disposal facility, who has contributed or who is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste which may present an imminent and substantial endangerment to health or the environment.

This and other relevant laws, including 42 U.S.C. § 6973 are reproduced in Pet. App. 72a-78a.

STATEMENT OF THE CASE

This case raises important questions about the scope of federal judicial power and the role of private citizens to enforce federal environmental laws. The court of appeals concluded that federal courts have the authority—under both Article III of the Constitution and the Resource Conservation Recovery Act ("RCRA")—to compel a party to undertake a multi-year, multi-million dollar study to ascertain the very facts necessary to determine *whether* plaintiffs are suffering a cognizable injury and *whether* mercury release "may present an imminent and substantial endangerment." These extraordinary holdings impermissibly broaden federal judicial power and afford private citizens an enforcement authority under RCRA that is co-equal with that of the executive branch. Unless corrected, the First Circuit's decision will fundamentally alter Congress's allocation of policy-making authority, permitting citizens freely to second-guess EPA's policy and enforcement choices. Ultimately, these errors will intrude upon the autonomy of the executive branch and will injure the Nation's economy.

The First Circuit held that plaintiffs established Article III standing because previously discharged chemicals gave rise to a non-fanciful fear of future injury. The court below found that a sufficient injury had been established even though

respondents could not show that petitioner's discharges of hazardous wastes exceeded any governmental safety standards; federal and state environmental officials believed that site-specific remedial efforts were sufficient to protect the public health; and the district court did not determine that the discharges were causing any downstream harms or that a downriver cleanup was necessary or feasible. This holding incorrectly resolves a pressing issue of national importance; namely, whether the Constitution recognizes an increased probability of risk as a cognizable injury where no politically accountable body has deemed that level of risk unacceptable.

In addition, the First Circuit's flawed interpretation of the liability standard of one of RCRA's citizen suit provisions permits citizens to sue for injunctive relief whenever they deem the actions of the Environmental Protection Agency or state regulators inadequate. As this Court has recognized, Congress assigned "[c]hief responsibility for the implementation of RCRA [to EPA]," *Meghrig* v. *KFC W., Inc.*, 516 U.S. 479, 483-84 (1996). In doing so, Congress authorized EPA to make scientific policy judgments about when solid or hazardous wastes pose unacceptable risks, and prescribed different standards for citizen suits depending on whether citizens sought to enforce an EPA policy judgment or to sue in the absence of such a judgment. In addition, Congress prescribed a clear hierarchy of environmental risks, and assigned EPA different remedial powers for each type.

The decision below makes a hash of this careful scheme. The lower court's lenient interpretation of the standard renders RCRA's bifurcation of citizen suits pointless, as it effectively permits citizens to sue to enjoin all risks EPA deems unacceptable, and any other non-imaginary risks. Moreover, the court's interpretation of "imminent and substantial endangerment" likewise gives no independent meaning to Congress's specification of three different—and clearly hierarchical—risk standards, treating them instead as inadvertent synonyms.

Most importantly, the lower court's reading undermines EPA's primacy in policy-making and enforcement. Under the lower court's lenient interpretation, private citizens can serve as unelected roving policy-makers, free to second guess the judgments of EPA and state environmental agencies. Because the proper interpretation of RCRA's citizen-suit provision determines whether responsibility for preventing environmental risks rests primarily with the executive branch or is shared equally by private citizens, it is a critically important issue to every entity subject to RCRA.

A. The Underlying Dispute.

From 1967 to 1982, Mallinckrodt owned and operated a chlor-alkali plant ("the Facility") that operated along the banks of the Penobscot River in Orrington, Maine. Pet. App. 2a. The Facility used mercury in the chlorine production process and, during the operation of the plant, mercury was released into the water and sediments of the Penobscot. *Id.* at 2a-3a. Mallinckrodt sold the Facility in 1982. *Id.* at 2a.

In 1970, the United States sued Mallinckrodt over the discharge of mercury into the Penobscot River from a chemical plant Mallinckrodt owned. Pet. App. 44a. Over the next two decades, a series of federal and state regulatory and enforcement actions reduced mercury discharges and remediated prior discharges. In this effort, EPA invoked its authority under RCRA[1] and eventually obtained entry of a 1993 consent decree that required a site investigation and corrective measures study. See *id.* at 3a. Although it no longer owned the plant, Mallinckrodt funded part of the costs

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[1] Under RCRA, EPA may order the owner or operator of a facility that treats, stores or disposes of hazardous waste to abate any release of such waste into the environment and to take such clean-up steps as it "deems necessary to protect human health or the environment." 42 U.S.C. § 6928(h)(1). EPA need not find, or prove, that the wastes so released pose an "imminent and substantial endangerment" prior to issuing such an administrative order.

of complying with the consent decree, and submitted site-investigation reports in 1995 and 1998. See *id.* at 47a. It also agreed to perform a series of interim clean-up measures at the facility, and committed to dredge mercury-contaminated sediments in the Southern Cove, an area of the River adjacent to the facility. See *id.* at 41a. In addition, Mallinckrodt later agreed to study downriver environmental conditions, and provided a report to EPA and the Maine Department of Environmental Protection (MDEP) in 2001. Joint Ex. 42, *Maine People's Alliance* v. *Holtrachem Mfg. Co.*, 211 F. Supp. 2d 237 (D. Me. 2002) (No. Civ. 00-69-B-C); see also Pet. App. 47a.

By the time of trial in this case, these agencies had proposed a set of "media protection standards," or clean-up levels designed to protect public health and the environment. Tr. Vol. 2-B, at 26-28, 47-48. Among these standards was a proposed maximum mercury concentration for downriver sediment that did not require a downriver clean-up. *Id.* at 47-48; see also Pet. App. 47a. Under this proposed standard, only the Southern Cove would require clean-up. Tr. Vol. 2-B, at 47-48; see also Pet. App. 47a. At trial, the EPA and MDEP project managers for the site both testified that they believed that the proposed standards would adequately protect human health and the environment. Tr. Vol. 2-B, at 61; Vol. 3-B, at 76. As the First Circuit acknowledged, had these media protection standards been adopted at the time of trial, no remediation would have been required for the area with which this litigation is concerned. Pet. App. 4a.

B. Proceedings And Rulings Below.

At the same time that EPA and MDEP requested the downriver study in writing, plaintiffs commenced this suit under RCRA, alleging that mercury discharged from the Facility "may present an imminent and substantial endangerment," 42 U.S.C. § 6972(a)(1)(B). Acknowledging that remediation might prove unnecessary or infeasible, the plaintiffs requested that Mallinckrodt be ordered to fund a

study to determine the nature and extent of endangerment. Pet. App. 4a.

The plaintiff organizations based their standing on four members, who testified that they had stopped eating fish or shellfish from the Penobscot and had refrained from fishing, swimming, or boating on the Penobscot due to their concerns about mercury levels. Pet. App. 64a-65a. These witnesses did not claim that they had suffered any adverse health effects as a result of such mercury. JA0113[2] (Galland); JA0129 (Reymore); JA0150 (Woods); JA0066 (Judd). All four, moreover, were aware that Maine had issued a fish consumption advisory that counsels sport fishers to limit or avoid entirely eating fish caught in any water of Maine statewide; they testified that they do not eat any fish from waters covered by that advisory. JA0114 (Galland); JA0130 (Reymore); JA0151 (Woods); JA0065 (Judd).

Although the plaintiffs submitted evidence that mercury downriver from the Facility is entering biota and magnifying, plaintiffs' own expert conceded that he did not know "if there is a problem." He admitted "[w]e don't know what the problem is . . . . [T]he only way to do remediation is to do a proper study, find out if there is a problem, if there is, what it is, and remediate it." JA0250-51.

The district court did not find that a clean-up of the estuary was necessary. Instead, it concluded that the conditions in the Penobscot raised a "reasonable medical concern" and a "reasonable scientific concern," Pet. App. 62a, and that this is sufficient to establish liability under § 7002(a)(1)(B). The court concluded that solid or hazardous wastes "may present an imminent and substantial endangerment" within the meaning of RCRA if there is "'some reasonable cause for concern that someone or something may be exposed to risk or

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[2] Citations to the "JA" refer to materials included in the Joint Appendix filed in the First Circuit in *Holtrachem Manufacturing Co.* v. *Maine People's Alliance*, 471 F.3d 277 (1st Cir. 2006) (No. 05-2331).

harm.'" *Id.* at 54a. Under this interpretation, any risk of harm that is not "'remote in time, completely speculative in nature, or de minimis in degree'" is sufficient to establish liability. *Id.* Based on this vague and extremely lenient standard, the district court found petitioner liable to fund an "independent study to determine if remediation of the conditions existing in the area south of the [Facility] is required and/or feasible and, if so, the precise content of the appropriate remediation plan." *Id.* at 69a.

In an accompanying order, the district court required the parties to propose plans for a study to determine the effects of mercury on the Penobscot River and Bay south of the plant site. Pet. App. 69a. After the parties submitted proposed plans, the court issued an order creating a three-person study panel. JA0273-81. The November 25, 2003 order set out a series of questions for the study panel to answer, including:

> (C) Is any mercury in the Penobscot River/Bay system having significantly adverse effects on populations of organisms in the lower Penobscot River/Bay system?
>
> (D) Is any mercury in the Penobscot River/Bay system posing an unacceptable risk to human health?
>
> (E) Do the scientific data lead to the conclusion that a mercury remediation program is necessary and feasible to effectively remediate the effects of any such harm caused by mercury contamination in the Penobscot River/Bay system?

JA0274-75.

On August 10, 2005, the district court entered an order approving the study plan and ordering the study panel to begin implementing the study. Pet. App. 37a-38a. The study plan "is designed to determine the extent of contamination downriver from the [Facility] and *whether such contamination endangers human health or the environment.*" JA0287 (emphasis added).

Petitioner appealed the order authorizing the study plan. Relying on decisions from other circuits, the First Circuit concluded that plaintiffs had Article III standing and that RCRA permits citizen suits so long as there is a "reasonable prospect of future harm . . . so long as the threat is near-term and involves potentially serious harm." Pet. App. 31a.

As to standing, the court held that "probabilistic harms are legally cognizable" if there is "a substantial probability that harm will occur." Pet. App. 9a, 11a. Based on this standard, the appellate court upheld the district court's finding that petitioner created a substantial probability of increased harm to the environment and that this increased risk rendered the plaintiffs' fears reasonable. *Id.* at 12a. The First Circuit dismissed petitioner's argument that when courts base standing on an increased risk of harm that no politically accountable body has deemed unacceptable, courts are improperly relying on what are essentially legislative or political judgments as the predicate for an exercise of judicial power. *Id.* at 12a-13a. The lower court believed that Congress had made the choice to "create a cause of action for affected citizens notwithstanding the absence of any EPA-sponsored activity," and that Article III's requirements had been met *Id.* at 13a-14a.

The First Circuit also upheld the district court's interpretation of RCRA, finding that the district court "read the statute's adjectival elements in line with the breadth of the authority granted." Pet. App. 18a. Turning first to case law construing the liability standard of § 7002 expansively, the Court stated that prior courts had "emphasized the preeminence of the word 'may' in defining the degree of risk needed to support RCRA § 7002(a)(1)(B)'s liability standard." Pet. App. at 17a. Imminence had generally been read to require only that the harm poses a near-term threat; "there is no corollary requirement that the harm necessarily will occur or that the actual damage will manifest itself immediately." *Id.*

The Court dismissed the textual and structural problems petitioner identified in this expansive reading. Petitioner argued that, under RCRA's hierarchy of risks and remedies, "an imminent and substantial endangerment" was the most stringent risk standard, yet the lower court's lenient interpretation made it impossible to give RCRA's less stringent risk standards any non-absurd independent meaning. Although the panel admitted that this hierarchy was "not easily disproved," it dismissed Congress's handiwork in devising these differing standards as "more a product of fortuity than a product of purposeful legislative initiative." Pet. App. 23a.

The panel also relied on differences in enactment dates to dismiss similarities in statutory terms. When Congress gave EPA authority in § 7003 to sue to enjoin an "imminent and substantial endangerment," this phrase had already been construed, in other environmental laws, to denote a heightened risk standard. But the panel concluded that the meaning the phrase had when it was added to RCRA was irrelevant. In its view, "the relevant question is how that term was understood *in 1984* (when section 7002(a)(1)(B) was enacted)." Pet. App. 20a.

REASONS FOR GRANTING THE PETITION

The First Circuit's construction of Article III represents an unwarranted extension of standing doctrine, one that is unsupported by prior decisions of this Court. In reaching its conclusion that the plaintiffs' fear of future harm was a cognizable injury-in-fact, where suit was brought against a private party that had not violated a regulatory standard and where the possibility of future harm was uncertain, the First Circuit disregarded a core principle of Article III, to "'identify those disputes which are appropriately resolved through the judicial process,'" *Lujan* v. *Defenders of Wildlife*, 504 U.S. 555, 560 (1992) (quoting *Whitmore* v. *Arkansas*, 495 U.S. 149, 155 (1990)). The decision below will result in

overextending the reach of the federal judiciary in a large class of cases, improperly requiring courts to make fundamentally political determinations.

In addition, the court's broad interpretation of RCRA is a fundamental misconstruction of the statute's text and structure. The breadth of the liability standard enunciated by the First Circuit confers on private citizens an enforcement power co-equal with that of the executive branch, contrary to Congress's identification of the EPA as the primary enforcer of RCRA. It also renders meaningless Congress's careful bifurcation of citizen suits and its specification of a hierarchy of three distinct risks, and associated remedies, treating virtually all of these statutory distinctions as the product of congressional sloppiness or inadvertence.

Accordingly, the Court should grant the petition and reverse the decision below in order to delineate the proper limits of federal judicial power and to protect the enforcement power entrusted primarily to the executive by Congress.

I. WHETHER AND THE EXTENT TO WHICH THE THREAT OF FUTURE HARM CAN GIVE RISE TO STANDING IN THE ABSENCE OF ANY INDEPENDENT AGENCY ACTION IS A RECURRING AND VITAL QUESTION OF CONSTITUTIONAL LAW.

This case presents a question that has not yet been resolved by this Court: whether any non-*de minimis* risk of future harm can suffice as a cognizable injury-in-fact when no politically accountable entity has deemed the risk unacceptable and when plaintiffs are not suing under a statute that gives them the right to judicial review of an agency's refusal to address a risk of harm.

Plaintiffs' members claim that they are injured by a loss of enjoyment of the Penobscot due to their concerns over mercury levels in the river. It is undisputed that virtually all bodies of water in Maine have some level of mercury and that

there are numerous other sources of mercury in the Penobscot in addition to discharges from the Facility. Thus, plaintiffs' injury-in-fact consists of their allegedly reasonable medical concern that the discharges from the Facility expose them to an increased probability of harm. This is not a cognizable Article III injury.

At the outset, it is essential to recognize that, because "'safe' is not the equivalent of 'risk-free,'" *Industrial Union Dep't* v. *American Petroleum Inst.*, 448 U.S. 607, 642 (1980) (plurality), some risk levels are societally acceptable. Indeed, in the environmental area, EPA often issues safety regulations that accept some level of societal harm. See, *e.g.*, *Dioxin/Organochlorine Ctr.* v. *Clarke*, 57 F.3d 1517, 1524 (9th Cir. 1995) (noting that EPA regulation accepted risk that 23 out of one million people will develop cancer due to hazardous substances found in fish). Determining what risks are societally acceptable is essentially a legislative, or political, task for which courts lack meaningful standards. *Industrial Union*, 448 U.S. at 662-63 (Burger, C.J., concurring) (statute authorizing agency to adopt standards "'reasonably necessary or appropriate to provide safe or healthful employment'" required agency to "make a policy judgment as to whether a specific risk of health impairment is significant"); *Environmental Def. Fund* v. *EPA*, 598 F.2d 62, 83-84 (D.C. Cir. 1978) (courts cannot "formulate policy with respect to what [environmental] risks are acceptable"); *National Lime Ass'n* v. *EPA*, 627 F.2d 416, 431 n.48 (D.C. Cir. 1980) (statute directing EPA to assess "a pollutant's danger to public health or welfare" requires the agency to "make essentially legislative policy judgments") (internal quotation marks and citation omitted). Such judgments are to be made by Congress or an agency to which it delegates such authority.

In environmental cases in which the injury-in-fact is based on a risk of harm, this Court has thus far limited standing to two specific circumstances. First, this Court has recognized

Article III injury in cases involving violations of regulatory requirements. See, *e.g.*, *Friends of the Earth, Inc.* v. *Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 184-85 (2000) (finding standing where it was "undisputed that Laidlaw's unlawful conduct—discharging pollutants in excess of permit limits—was occurring at the time the complaint was filed"). Second, the Court has found standing when a litigant brings an action against a governmental agency charged with protecting the public from harms, and Congress has authorized judicial review of that agency's decisions, thus creating a procedural right. See, *e.g.*, *Massachusetts* v. *EPA*, 127 S. Ct. 1438, 1453 (2007). The First Circuit went a large and significant step beyond these classes of cases, an extension that is unsupported by this Court's holdings and is contrary to the principles underlying Article III.

Establishing the reasonableness of a fear of future harm by pointing to the violation of a federal requirement is fully consistent with the "separation and equilibration of powers" principles essential to Article III. See *Steel Co.* v. *Citizens for a Better Env't*, 523 U.S. 83, 101 (1998) In such a circumstance, a court is not basing the exercise of judicial power on its own assessment that a particular risk of an environmental harm is unacceptably high. Instead, it is relying on such an assessment by the expert agency that Congress has entrusted with making such judgments. See, *e.g.*, *Friends of the Earth, Inc.* v. *Gaston Copper Recycling Corp.*, 204 F.3d 149, 157 (4th Cir. 2000) ("[b]ecause [effluent] discharge restrictions are set at the level necessary to protect the designated uses of the receiving waterways," violations of these restrictions are presumptively harmful). However, where a court finds—notwithstanding the absence of a determination by any politically accountable body—that a fear based on some chance of future harm is reasonable, it makes what is fundamentally a political decision, thus purporting to exercise power to which it is not constitutionally entitled and for which it lacks institutional competence.

Similarly, where Congress has authorized review of governmental actions, courts have found standing based on their assessment that a risk of harm is substantially probable. As this Court has recognized, the congressional creation of a broad statutory procedural right permits a finding of standing "without meeting all the normal standards for redressability and immediacy." *Massachusetts* v. *EPA*, 127 S. Ct. at 1453. In such cases, an agency's judgment that risks permitted by its own decision are societally acceptable cannot be dispositive of standing (otherwise, the review mechanism would be meaningless). At the same time, however, the government's decision is subject to a highly deferential standard of review—arbitrary and capricious or in excess of statutory authority. These standards safeguard the province of the executive and prevent the judiciary from thrusting itself into a policy-making role.

This Court's recent decision in *Massachusetts* v. *EPA*, 127 S. Ct. 1438, further emphasizes the importance of prior agency action in analyzing Article III's core requirements. In that case, a politically accountable body—the state—sued the federal government to protect the rights of its citizens. Congress had provided an explicit right to challenge the relevant EPA actions. See *id.* at 1454-55. Standing was thus based on two factors, both absent here. First, the state, which has a special status for the purpose of invoking federal jurisdiction, had standing to sue based on the state's own "stake in protecting its quasi-sovereign interests." *Id.* Second, the suit was brought to challenge EPA action under the APA. *Id.* at 1453. The APA's grant of procedural rights permits a finding of standing without meeting all the normal standards for redressability and immediacy. *Id.*

In the decision below, the First Circuit failed to recognize the limit of this Court's environmental standing cases. The lower court cited *Laidlaw*, 528 U.S. at 183, and *Sierra Club* v. *Morton*, 405 U.S. 727, 735 (1972), neither of which supports a lenient injury standard whereby the judiciary must

determine on its own whether an environmental risk is unacceptably high. See Pet. App. 10a. In *Laidlaw*, this Court based the reasonableness of the plaintiffs' fear of future harm on the fact that the defendant was illegally discharging pollutants in excess of permit limits established by an agency. See *Laidlaw*, 528 U.S. at 184. In *Sierra Club*, standing was denied even though the case was brought under the APA to challenge agency action. See *Sierra Club*, 405 U.S. at 734-35.

Also unhelpful to the First Circuit's conclusion are the cases it cited that were brought under the Clean Water Act ("CWA"). These cases involve violations of effluent discharge limits that the EPA had established based upon what it determined to be unacceptable risks of harm to health or the environment. Accordingly, in such circumstances, the economic, aesthetic and health concerns and fears of those with recreational or other interests in the body of water are, by definition, legally "reasonable"; the plaintiffs fear harms from discharges of pollutants in amounts that an expert and politically accountable agency charged with protecting human health and the environment has concluded are harmful or pose unacceptable risks of harm. See *Texas Indep. Producers & Royalty Owners Ass'n* v. *EPA*, 410 F.3d 964, 974 (7th Cir. 2005) (explaining that *Laidlaw*, *Gaston* and other cases involved "alleged aesthetic and recreational injuries caused by violations of a permit," and noting that the plaintiffs "'fear[ed] . . . pollution from [the defendants'] permit exceedances'").

In this case, no politically accountable body has ever determined that the levels of mercury in the Penobscot River create a reasonable threat of future harm. Plaintiffs allege no violation of any federally prescribed discharge limits. Nor are they bringing suit against a governmental body challenging agency action under the APA. They are thus entitled to no presumption that the discharges are harmful or that the increased risk they face is unacceptable. Instead, they are

asking the courts to make the inherently legislative or political judgment that their medical concerns should be deemed reasonable notwithstanding the absence of any agency or governmental action. In other words, they are asking the courts to rule, in the absence of any finding by the expert agency primarily responsible for enforcing the nation's environmental laws, that the medical and scientific uncertainties created by mercury in the Penobscot create an unacceptable increased risk of harm.

The First Circuit's finding of injury-in-fact in these circumstances, therefore, is a significant and unwarranted extension that compels courts to make judgments for which they lack institutional competence and constitutional authority.[3] Indeed, this case illustrates why courts should not make such legislative decisions. The courts below made their own policy judgments about unacceptable risks, then used those judgments to exercise judicial power to compel the type of investigation that EPA would conduct before, not after, deciding whether a risk is unacceptable. See *infra*.

Thus, while plaintiffs' expert conceded that "we don't know if there is a problem," JA0250, the district court nonetheless decided that plaintiffs' concerns over mercury in

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[3] *O'Melveny & Myers* v. *FDIC*, 512 U.S. 79, 89 (1994) (weighing and appraising policy considerations is a task "for those who write the laws, rather than for those who interpret them") (internal quotation marks omitted); *Chevron U.S.A., Inc.* v. *Natural Res. Def. Council, Inc.*, 467 U.S. 837, 866 (1984) ("[t]he responsibilities for assessing the wisdom of . . . [environmental] policy choices . . . are not judicial ones"); *Texas Indus., Inc.* v. *Radcliff Materials, Inc.*, 451 U.S. 630, 647 (1981) (policy choices must be resolved "within the legislative process after the kind of investigation, examination, and study that legislative bodies can provide and courts cannot") (internal quotation marks omitted); cf. *Chicago & S. Air Lines* v. *Waterman S.S. Corp.*, 333 U.S. 103, 111 (1948) (complex decisions that affect the safety or security of the nation "should be undertaken only by those directly responsible to the people whose welfare they advance or imperil. They are decisions of a kind for which the Judiciary has neither aptitude, facilities nor responsibility").

the Penobscot were "reasonable" and, based on this policy decision, has now ordered an expensive study to determine whether there is any reality to the injury plaintiffs fear. But it should have been plaintiffs' burden to show that they have properly invoked the jurisdiction of the federal court. The district court's order merely confirms that they did not discharge that burden.

Review of the decision below is thus necessary to ensure that federal courts respect the limits established by Article III. For this reason, the petition should be granted and the decision below vacated.

II. THE PROPER INTERPRETATION OF THE CITIZEN-SUIT PROVISION OF THE RESOURCE CONSERVATION AND RECOVERY ACT IS AN IMPORTANT QUESTION OF FEDERAL LAW.

This Court should also review the First Circuit's erroneous construction of the liability standard of RCRA's citizen-suit provision. While petitioner acknowledges that there is no split of Circuit Court authority on this issue, the lenient liability standard the First Circuit and others have adopted compels courts to make questionable policy decisions about whether particular risks are unacceptable, and undermines EPA's policy-making primacy under RCRA. The petition should be granted to address these critically important issues and to restore the balance of authority Congress mandated.

A. The Lower Court's Interpretation Is Inconsistent With The Statute's Allocation Of Policy-Making And Enforcement Authority.

Because the task of determining whether a particular risk of environmental harm is societally unacceptable is an inherently political task calling for normative judgments, Congress assigned "[c]hief responsibility for the implementation of RCRA [to EPA]," *Meghrig*, 516 U.S. at 483-84. Throughout RCRA, Congress vested EPA with broad authority to issue permits, regulations and orders based

on EPA's policy determinations of what risks to health and the environment are unacceptable. See, *e.g.*, 42 U.S.C. §§ 6922(a), 6923(a), 6924(a), (b), (d), (e), 6925. RCRA's citizen-suit provisions serve as adjuncts to EPA's over-arching enforcement role. One such provision authorizes citizens to sue to enforce the policy judgments embodied in EPA permits, rules, regulations or orders without any showing of harm. *Id.* § 6972(a)(1)(A), (a)(2). In the absence of such judgments, however, citizens can sue only where they establish that wastes may present an "imminent and substantial endangerment." *Id.* § 6972(a)(1)(B). Interpreting this endangerment standard to require a showing that a grave risk of harm is more likely than not to occur is consistent with Congress's allocation of responsibility: it ensures that primary policy-making and enforcement authority rests with EPA, that citizens cannot freely second-guess EPA's policy decisions, and that courts make policy choices only in limited situations, where a risk of grave harm is likely.

The First Circuit's interpretation, however, implausibly treats the phrase "imminent and substantial endangerment" in § 7002(a)(1)(B) as a grant of co-equal policy-making responsibility to judges and private citizens. Citizens can sue, and courts may issue injunctions, based on any increased risk of harm that cannot be deemed *de minimis* or irrational. Indeed, in this case, plaintiffs and the district court used this provision to second-guess EPA's actions. EPA ordered the clean-up of the plant and nearby cove, compelled a downriver study and proposed media protection standards that it thought sufficient to protect health and the environment. Tr. Vol. 2-B, at 26-28, 47-48, 61. Plaintiffs deemed this inadequate, and are using § 7002(a)(1)(B) so that they and the district court can decide whether and what more should be done. RCRA's overall structure and allocation of responsibilities to EPA make clear that Congress did not intend any such result.

B. The Decision Below Misconstrues RCRA And Violates Fundamental Rules Of Statutory Interpretation.

1. The First Circuit Failed To Give Meaning To RCRA's Hierarchy Of Risks And Remedies.

Neither the First Circuit nor any other court of appeals that has adopted the lenient interpretation of § 7002(a)(1)(B)'s liability standard has reconciled that standard with RCRA's hierarchy of risks and remedies. Under § 3019(b), if EPA finds that a landfill "poses a *substantial potential risk* to human health," it may ask another federal entity to conduct a "health assessment." 42 U.S.C. § 6939a(b)(2) (emphasis added). Under § 3013, if EPA determines that the release of hazardous waste "may present a *substantial hazard* to human health or the environment," it may order "monitoring, testing, analysis, or reporting." *Id.* § 6934(a), (d) (emphasis added). And, under § 7003, if EPA determines that hazardous waste "may present an *imminent and substantial endangerment* to health or the environment," it may seek injunctive relief. *Id.* § 6973(a) (emphasis added).

These provisions describe three distinct risk levels—"a substantial potential risk," "a substantial hazard," and "an imminent and substantial endangerment"—and prescribe three distinct remedial responses—a government-funded risk analysis; a government-compelled analysis; and immediate injunctive relief. This graduated scale of risks and responses makes clear that "an imminent and substantial endangerment" is the most significant potential risk, one so grave and likely that it warrants immediate preventive action. Interpreting this highest of risk standards to mean "any risk" that gives rise to a "reasonable medical concern," however, leads to the absurd conclusion that Congress used the lesser risk standards of "substantial potential risk" and "substantial hazard" to authorize actions based on unreasonable medical concerns.

Unable to disprove this hierarchy, the First Circuit simply brushed it off by stating that its interpretation of § 7002 "gives full effect to the 'imminent and substantial endangerment' language; it merely eschews the mechanical cross-referencing, not mandated by Congress." Pet. App. 22a. But, as just noted, that interpretation" of § 7002 does not give any non-absurd meaning to RCRA's other risk standards. And, giving independent meaning to all three risk standards is not an exercise in "mechanical cross-referencing"; it is the fulfillment of the court's duty to interpret RCRA as a "symmetrical," "coherent" and "harmonious whole." *Gustafson* v. *Alloyd Co.*, 513 U.S. 561, 569 (1995); *FTC* v. *Mandel Bros., Inc.*, 359 U.S. 385, 389 (1959).

Citing *King* v. *St. Vincent's Hospital*, 502 U.S. 215, 222 (1991), the First Circuit stated that, "[i]f Congress actually wants a delineated hierarchy of risks and remedies, it will have to say so more distinctly." Pet. App. 23a-24a. Clear statement rules, however, apply in areas of constitutional concern.[4] Congress has no duty to speak "distinctly" when exercising its core constitutional power to create environmental risk standards, and *King* does not suggest otherwise.

Indeed, it is the judiciary that has the duty to harmonize all parts of the statute. That duty, moreover, applies even when provisions are adopted at different times. See 1A Norman J. Singer, *Sutherland Statutes and Statutory Construction* §§ 22:34, 22:35 (2006) (provisions introduced by amendment "should be read together with . . . the original section . . . as if [both] had been originally enacted as one section. Effect is to be given to each part, and they are to be interpreted so that

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[4] *See Gregory* v. *Ashcroft*, 501 U.S. 452, 461 (1991) (clear statement rules apply "'"[i]n traditionally sensitive areas, such as legislation affecting the federal balance"'"). *See generally* William N. Eskridge, Jr. & Philip P. Frickey, *Forward: Law as Equilibrium*, 108 Harv. L. Rev. 26, 81-82 (1994).

they do not conflict." (footnotes omitted)). To conclude that three separate risk standards are merely inadvertent synonyms adopted by different Congresses, Pet. App. 23a-24a, is a complete abdication of that duty. Here, harmonization is entirely possible: construing "imminent and substantial endangerment" to mean a risk of grave harm that is more likely than not to occur gives independent meaning to all of RCRA's risks standards. Courts simply cannot reject a coherent interpretation that harmonizes all statutory provisions in favor of a reading that fails to give independent meaning to distinct provisions, then attribute the incongruity to congressional sloppiness. Instead, in such circumstances, they must choose the coherent, harmonious reading.

2. The First Circuit's Interpretation Renders § 7002(a)'s Bifurcation Of Citizen Suits Superfluous.

In addition, the First Circuit's interpretation renders RCRA's careful bifurcation of citizen suits meaningless. As noted above, Congress authorized citizens to enforce the policy judgments in EPA permits, rules, or regulations without any showing of risk of harm in one provision, 42 U.S.C. § 6972(a)(1)(A), (a)(2), but required citizens to show that wastes "may present an imminent and substantial endangerment" when they sue in the absence of such EPA judgments, *id.* § 6972(a)(1)(B). Under the First Circuit's interpretation, however, citizens can sue to enjoin (1) all risks EPA deems unacceptable and (2) all other non-*de minimis* risks. See, *e.g.*, *Jarecki* v. *G.D. Searle & Co.*, 367 U.S. 303, 307 (1961) ("'[i]f there is a big hole in the fence for the big cat, need there be a small hole for the small one?'").

Once again, the First Circuit's reason for dismissing this problem cannot be squared with cardinal rules of interpretation. Because Congress adopted the second category of citizen suits eight years after providing for permit-violation suits, the court below thought it "'obvious'" that, when Congress "'cut a second hole in the fence, . . . [it] wanted to

increase the ease with which cats of all sizes could come through the fence.'" Pet. App. 27a. The problem is that Congress did not repeal the first category of suits and replace it with a broad catch-all citizen suit provision. Instead, it simply added a provision, and courts must, if possible, give meaning to both provisions. This is not possible, however, under the First Circuit's interpretation. That impossibility renders the interpretation invalid; it cannot be brushed aside as mere inadvertence by a later Congress.

3. The Lower Court's Interpretation Fails To Give The Same Words In Different Parts Of RCRA The Same Meaning.

In pre-RCRA environmental statutes, the phrase "'will endanger'" was construed to require a "'significant risk of harm,'" *Ethyl Corp.* v. *EPA*, 541 F.2d 1, 20 n.36 (D.C. Cir. 1976) (en banc), and the modifier "'imminent and substantial'" was "used . . . to mandate more certain endangerment." *Id.*; see also *Reserve Mining Co.* v. *EPA*, 514 F.2d 492, 528 (8th Cir. 1975) (en banc) (the phrase "'[is] endangering'" "connotes a lesser risk of harm than the phrase 'imminent and substantial endangerment'"). Thus, when Congress used the words "imminent and substantial endangerment" in § 7003 of RCRA, it presumably "intended them to have the same [stringent] meaning that courts had already given them" in earlier environmental laws. *Holmes* v. *Securities Investor Prot. Corp.*, 503 U.S. 258, 268 (1992). That presumption is confirmed by the legislative history, which described EPA's right to sue under § 7003 as an "emergency authority." S. Rep. No. 94-988, at 16-17 (1976).

Because "'identical words used in different parts of the same act are intended to have the same meaning,'" *Gustafson*, 513 U.S. at 570, the phrase "imminent and substantial endangerment" in § 7002(a)(1)(B) must have the same stringent meaning Congress intended it to have in § 7003. Indeed, "[t]he interrelationship and close proximity of these provisions . . . presents a classic case for application of" this

presumption, *Desert Palace, Inc.* v. *Costa*, 539 U.S. 90, 101 (2003) (internal quotation marks omitted), which, in such circumstances, can be overcome only by "strong evidence" of a contrary intent. *Japan Whaling Ass'n* v. *American Cetacean Soc'y*, 478 U.S. 221, 238-39 (1986). The panel's interpretation of § 7002(a)(1)(B) is flatly inconsistent with these principles.

The First Circuit concluded that, although the 1984 Congress that added § 7002(a)(1)(B) to RCRA intended it to operate the same as § 7003, the 1984 Congress understood § 7003 differently than "how Congress viewed 7003 at the time of its original passage," and the 1984 Congress's understanding of § 7003 controls the meaning of § 7002(a)(1)(B). Pet. App. 28a; see also *id.* at 20a. This is not evidence that Congress intended the same words to have different meanings in adjoining provisions. Rather, it is a ruling that the 1984 Congress *misunderstood* the liability standard an earlier Congress had enacted in § 7003. Because the 1976 Congress's intent controls the meaning of "substantial and imminent endangerment" in § 7003, the panel's interpretation leads to the untenable conclusion that identical words in different parts of the same law have different meanings due to congressional inadvertence.

Indeed, the untenable nature of the First Circuit's interpretation is underscored by § 3008(e) of RCRA. This provision, entitled "Knowing Endangerment," makes it a crime to handle or dispose of hazardous waste in violation of various permitting or related requirements if the person "knows at that time that he thereby places another person in imminent danger of death or serious bodily injury." 42 U.S.C. § 6928(e). Because "endangerment" in this provision means a "danger of death or serious bodily injury," an "imminent and substantial endangerment" cannot mean simply any "reasonable medical concern." The appellate court below suggested that the "divergent concerns" of criminal provisions made this discrepancy unsurprising. Pet.

App. 22a. But criminal laws diverge from civil provisions in their concern with moral culpability, and that concern is addressed by § 3008(e)'s mens rea requirement. Section 3008(e)'s criminal nature, therefore, does not explain the incongruous discrepancy in meaning between the same word in two provisions of the same law.

C. The Lower Court's Error Is An Issue Of Significant National Importance Because It Will Have A Significant Adverse Effect On Industrial Development And Will Interfere With Agency Enforcement Decisions.

The First Circuit's erroneous and expansive reading of RCRA's citizen-suit provision threatens to undermine the balance between environmental protection and industrial development. Cf. *International Paper Co.* v. *Ouellette*, 479 U.S. 481, 494 (1987) (recognizing that certain application of state law against a private party would "upset[] the balance of public and private interests so carefully addressed by the [Clean Water] Act"). Congress has expressly granted the EPA the right to determine safe levels of discharge and has granted citizens the right to bring suit in only two instances: to enforce agency standards or to abate serious risks of grave injury. By allowing citizens to sue for all non-*de minimis* risks, the First Circuit's interpretation plainly and impermissibly upsets the legislative choice that EPA should determine appropriate levels of risk, not courts or private parties. Upsetting this balance will skew incentives toward over-deterrence and under-development, thwarting the will of Congress and affecting the Nation's economy.

The expansive reading the lower courts have given RCRA's citizen-suit provision exposes any business that discharges at all to the risk of a suit whenever citizens are disappointed with the pace of State or EPA progress or whenever there is any concern about a potential future harm. The high risk of litigation in this broad class of cases alters the manner in which businesses evaluate the cost of industrial development

and inhibits beneficial production throughout the United States. Businesses must consider a significant risk of facing litigation by private parties, who can sue, even in the absence of any violation of any objective standard. This absence of standards makes it difficult for businesses to discern how to comply with the law; compliance is a roving target, leaving industry to guess at what level of protection is enough. To protect against the possibility of litigation, businesses must over-invest in environmental safeguards. And even that over-investment may not be sufficient. Both protection of the environment and the development of industry are public goods. The expansive interpretation adopted by the lower courts alters the balance between them, inhibiting production.

Allowing citizens to sue under such a lenient standard also risks irrational enforcement of RCRA. Citizens are not constrained by the kind of considerations that regulators take into account. Individual citizens generally have one concern: their own protection. Cf. Joseph F. Brodley, *Antitrust Standing in Private Merger Cases: Reconciling Private Incentives and Public Enforcement Goals*, 94 Mich. L. Rev. 1, 15 (Oct. 1995) ("[P]rivate enforcers, driven by their own self-interest, may deviate from antitrust goals . . . ."). Single-focused citizens do not consider the costs of that protection, and whether such costs are warranted. Citizens instead generally desire complete safety—something that environmental regulations cannot ensure. Cf. *Industrial Union Dept.*, 448 U.S. at 664 (Burger, C.J., concurring) ("Perfect safety is a chimera . . . ."). The lack of a balanced consideration of appropriate levels of safety (as opposed to complete safety) will result in irrational enforcement of the statute, and companies will be forced to over-invest in protection, stymieing beneficial development. Cf. *id.* ("[R]egulation must not strangle human activity in the search for the impossible.").

Finally, as this case proves, the judicial intrusion required under the broad statutory reading interferes with federal and

state regulation. Such intrusion hinders "the proper functioning of the agency" and "denies the agency an opportunity to correct its own mistakes and apply its expertise." Cf. *FTC* v. *Standard Oil Co.*, 449 U.S. 232, 242 (1980). This case amounts to a complaint about what the federal and state regulators should have done. Allowing such a collateral challenge of agency action necessarily interjects judges into the sphere of executive and legislative power. See *Chevron U.S.A, Inc.* v. *Natural Res. Defense Council, Inc.*, 467 U.S. 837, 865 (1984) ("Judges are not experts in the field, and are not part of either political branch of the Government. Courts must, in some cases, reconcile competing political interests, but not on the basis of the judges' personal policy preferences."). Searching judicial review of administrative action is contrary to clearly established legal principles. See *id.* at 843-45. The increased number of citizen suits and increased judicial involvement ultimately "may have the effect of misdirecting the EPA's own enforcement efforts." See Frank B. Cross, *Rethinking Environmental Citizen Suits*, 8 Temp. Envtl. L. & Tech. J. 55, 68 (1989).

The First Circuit's broad interpretation of RCRA's citizen suit provision will have significant and far-reaching affects, stymieing industry and interfering with agency action.

* * * *

In short, the proper interpretation of RCRA's "imminent and substantial endangerment" standard is a profoundly important question of federal law. The lower court's erroneous interpretation undermines EPA's enforcement and policy-making primacy under RCRA, and forces courts to make essentially legislative decisions about whether environmental risks are societally acceptable. Courts have neither the institutional aptitude nor constitutional responsibility to make such judgments, and the text and structure of RCRA make unmistakably clear that Congress did not confer such authority on them. The Court should grant the petition to address these critically important issues.

CONCLUSION

For the foregoing reasons, the petition for a writ of certiorari should be granted.

Respectfully submitted,

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May 16, 2007

APPENDIX

APPENDIX A

UNITED STATES COURT OF APPEALS
FIRST CIRCUIT

No. 05-2331

MAINE PEOPLE'S ALLIANCE and
NATURAL RESOURCES DEFENSE COUNCIL,
Plaintiffs, Appellees,

v.

MALLINCKRODT, INC.,
Defendant, Appellant.

Heard Oct. 5, 2006
Decided Dec. 22, 2006

Before SELYA and HOWARD, *Circuit Judges*, and SMITH,* *District Judge*.

SELYA, *Circuit Judge*.

In the teeth of two decades of contrary precedent from four circuits, defendant-appellant Mallinckrodt, Inc. asks us to restrict the role of private citizens in the abatement of imminent and substantial threats to the environment and public health. In support of this entreaty, Mallinckrodt presents a gallimaufry of new, hitherto unconsidered arguments. After careful consideration of this asseverational array, we conclude that our sister circuits have adroitly distilled the meaning of section 7002(a)(1)(B) of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6972(a)(1)(B)—the so-called citizen suit provision. Correctly interpreted, this provision allows citizen suits when there is a reasonable

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* Of the District of Rhode Island, sitting by designation.

prospect that a serious, near-term threat to human health or the environment exists.[1] In such situations, the provision permits remedies consistent with the scope of a district court's equitable discretion.

The district court read the statute in this manner and faithfully applied the law to the facts. Its supportable liability finding, coupled with a choice of remedy that comes within the encincture of its discretion, leads us to reject Mallinckrodt's appeal.

I. BACKGROUND

We rehearse here only those facts that are directly relevant to the issues on appeal, referring readers who hunger for more information to the district court's initial opinion. *See Me. People's Alliance v. HoltraChem Mfg. Co.*, 211 F.Supp.2d 237 (D.Me.2002). This narrative credits the factual findings of the district court to the extent that those findings are not clearly erroneous. *See Fed. Refinance Co. v. Klock*, 352 F.3d 16, 27 (1st Cir.2003).

From 1967 to 1982, Mallinckrodt, then called International Minerals and Chemicals Corporation, owned and operated a chlor-alkali plant (the Plant) situated on the banks of the Penobscot River in Orrington, Maine. Thereafter, the Plant continued operations under other owners, namely, Hanlin Group, Inc. and HoltraChem Manufacturing Co.,[2] until it closed in 2000. During the period of its operation, the Plant

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[1] We use the phrase "near-term threat" advisedly. It is the *threat* that must be close at hand, even if the perceived *harm* is not. For example, if there is a reasonable prospect that a carcinogen released into the environment today may cause cancer twenty years hence, the threat is near-term even though the perceived harm will only occur in the distant future.

[2] Hanlin Group declared bankruptcy in 1991 and was never named as a defendant in this action. HoltraChem dissolved in 2001 and, although originally a party, did not participate in the critical district court proceedings.

deposited tons of mercury-laden waste into the Penobscot River. *See Me. People's Alliance*, 211 F.Supp.2d at 253. While there have been a number of other significant contributors to mercury in the Penobscot, "Mallinckrodt has been a dominant source." *Id.* at 255.

In 1986, the Plant's continuous release of mercury led the Environmental Protection Agency (EPA) to file an administrative RCRA action against Hanlin (the Plant's quondam owner). That action resulted in an agreement for corrective measures. Deeming turnabout fair play, Hanlin sued Mallinckrodt for contribution. In a 1991 settlement, Mallinckrodt agreed to pay a portion of the compliance costs imposed by the agreement.

A subsequent enforcement action led to a 1993 consent decree that superseded the earlier agreement. Although not a party to this consent decree, Mallinckrodt, consistent with the Hanlin settlement, paid its share of the compliance costs and participated in ongoing negotiations with government regulators.[3] That included working with both EPA and Maine's Department of Environmental Protection (MDEP).

The 1993 consent decree contemplated a tripartite process comprising site investigation, evaluation of possible corrective measures, and remediation. In line with the first phase of this process, Mallinckrodt compiled and submitted a site investigation report. In March of 1997, EPA and MDEP, acting in concert, issued a draft notice of disapproval. Mallinckrodt countered with a supplemental site investigation report but, in 2000, EPA and MDEP again disapproved. Among other things, the regulators instructed Mallinckrodt to study the effects of mercury downriver from the Plant.

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[3] HoltraChem was involved with Mallinckrodt in much of the pretrial activity. For ease of exposition, however, we henceforth will refer to the Plant owners collectively as "Mallinckrodt." This rhetorical device has no bearing on the outcome of this appeal.

Within a matter of months, Mallinckrodt commissioned a study aimed at examining downriver mercury contamination. It conducted a second downriver study during the summer of 2001. Notwithstanding the submission of these studies, however, the district court supportably found that Mallinckrodt made only minimal efforts to pursue the designated line of inquiry and that the decision to forgo more vigorous efforts was deliberate. *Id.* at 244 & n. 9.

In the midst of this sparring, two environmental groups—the National Resources Defense Council and the Maine People's Alliance—joined forces to commence a citizen suit under RCRA § 7002(a)(1)(B). The plaintiffs alleged that mercury contamination downriver from the Plant "may present an imminent and substantial endangerment to health or the environment." Acknowledging the possibility that remediation might eventually prove to be either unnecessary or infeasible, their principal prayer for relief was that Mallinckrodt be ordered to fund an "independent, comprehensive, scientific study to determine the precise nature and extent of the endangerment."

Mallinckrodt tried on several occasions to derail the suit on the ground that EPA, not the courts, had primary jurisdiction. The district court demurred, holding that the suit would not present any conflict with agency action due to EPA's apparent lack of interest in the lower Penobscot.

The case was reached for trial in March of 2002. By that time, EPA and MDEP had made public, but had not adopted, preliminary media protection standards, potentially applicable to the lower Penobscot. Had those standards gone into effect, no remediation would have been required for the region with which this litigation is concerned.

During a nine-day bench trial,[4] one of the plaintiffs' principal experts was Dr. Robert Livingston. The district court found Livingston, an aquatic biologist, to be "particularly credible and persuasive." *Id.* at 251. Drawing on three main sources—the data gathered under the EPA-ordered site studies, some limited field work, and the scientific literature concerning mercury in aquatic systems—Livingston opined that there might be a serious endangerment to both human health and the environment resulting from mercury contamination in the lower Penobscot. Although believing it "highly likely" that these harms would prove to be both real and severe, he cautioned that he had not yet "done the right research to determine that." Due to the absence of sufficient research, no one could know with certitude "if there is a problem" or "what the problem is." When all was said and done, however, he thought it "highly likely" that localized and targeted remediation would be both necessary and desirable.

The plaintiffs also adduced testimony from other experts, from individuals within their respective memberships, and from EPA and MDEP representatives. A number of defense experts testified as well. After both sides had rested and submitted briefs, the district court issued a thoughtful rescript.

The court found that mercury in aquatic systems is susceptible to being transformed by microscopic organisms into its organic form (known as methylmercury). *Id.* at 244.

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[4] We need not recount the trial testimony in endless detail. The critical facts are laid out in the district court's rescript. Even though many of the facts are undisputed, the parties have woven them into widely dissimilar tapestries. On the plaintiffs' telling, Mallinckrodt is an unrepentant polluter, which consistently flouted governmental enforcement efforts and finally wore down the regulators. On Mallinckrodt's telling, the plaintiffs are overzealous environmentalists attempting an end run around the reasoned policymaking of an Executive Branch agency. These pejorative portrayals do little to aid the resolution of the issues before us.

Methylmercury is a highly toxic substance which, even in low dosages, is inimical to human health; for example, it "attacks the nervous system, the kidneys, the immune system, and the reproductive system" and is especially damaging to a developing fetus. *Id.* at 245. Methylmercury is especially pernicious because it is the most bioavailable form of mercury and therefore, is readily accumulated in humans and animals alike. *Id.* at 244.

Next, the court found that mercury concentration in sediments extracted from the lower Penobscot runs five times higher than in the Kennebec River (which Mallinckrodt's expert identified as an appropriate comparator). *Id.* at 248. Despite this high concentration, the court wisely recognized that "the mere presence of mercury contaminated sediments is alone not enough to constitute an imminent and substantial endangerment," *id.*, so it proceeded to examine the available data concerning mercury contamination in various species in the lower Penobscot, including benthos, killfish (minnows), lobsters, blue mussels, cormorants, osprey, and eagles. This examination led the court to conclude that "mercury is methylating downriver" and that "methylmercury is bioavailable, entering biota, and biomagnifying throughout the food web." *Id.* at 251.

The court expressed heightened concern about a region known as Frankfort Flats, which displayed extraordinarily high mercury readings in both sediments and biota. *Id.* at 252. Frankfort Flats receives drainage from a marsh system, and marshes are considered to be hotbeds of methylation. *See id.*

When the district court turned to the legal standard for citizen suits under RCRA § 7002(a)(1)(B), it characterized that standard as "lenient." 211 F.Supp.2d at 246. It cited with approval case law emphasizing that RCRA allows such a suit when the putative polluter "*may*" have caused an imminent and substantial endangerment. *Id.* at 246-47 (collect-

ing cases). On this basis, the court concluded that the statute's "imminent and substantial endangerment" standard would be satisfied by a "reasonable medical concern for public health and a reasonable scientific concern for the environment." *Id.* at 252.

Applying this interpretation of the statute to the facts as found, the court determined that Mallinckrodt's disposal activities may have created an imminent and substantial danger and that, therefore, the plaintiffs had carried their burden of proof anent liability. *Id.* at 251-52. Then, having found liability, the court directed the parties to make a good-faith effort to agree on a study plan. *Id.* at 256. The parties complied and, on August 10, 2005, the court approved a plan which, if carried out, probably will require Mallinckrodt to spend around $4,000,000 for laboratory analyses, independent of all other costs. The purpose of the study is to learn whether, in actuality, mercury contamination in the lower Penobscot adversely affects either human health or the environment, and if so, to devise a feasible remedial approach.

Mallinckrodt now appeals, asserting that the plaintiffs lacked standing to sue in the first place; that the lower court set the bar too low for RCRA citizen suits; and that, in all events, the court abused its discretion in fashioning relief. We address these assertions one by one.

II. STANDING

As a threshold matter, Mallinckrodt alleges that the plaintiffs lack standing to sue because they have not suffered an injury in fact.[5] The existence vel non of standing is a legal

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[5] Mallinckrodt also makes a weak argument that the claimed injury cannot be redressed by the relief requested. This argument focuses on the uncertainty attendant to the study's outcome (for example, the study may find that there is no endangerment or, if endangerment exists, that it cannot be rectified). But even in the absence of a demonstrated need for remediation, the information that the study will provide is adequate

question and, therefore, engenders de novo review. *See N.H. Right to Life Political Action Comm. v. Gardner*, 99 F.3d 8, 12 (1st Cir.1996). When, however, the trial court's standing determination rests on findings of fact, we must honor those factual findings unless they are clearly erroneous. *See Rivera v. Wyeth-Ayerst Labs.*, 283 F.3d 315, 319 (5th Cir.2002).

We start our inquiry into standing with the undisputed fact that both of the plaintiffs are associations. In order to ground a claim of associational standing (that is, standing to bring suit on behalf of its membership), an association must show three things: (i) that individual members would have standing to sue in their own right; (ii) that the interests at stake are related to the organization's core purposes; and (iii) that both the asserted claim and the requested relief can be adjudicated without the participation of individual members as named plaintiffs. *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 181, 120 S.Ct. 693, 145 L.Ed.2d 610 (2000). The plaintiffs in this case plainly have made the latter two showings. Hence, the inquiry reduces to whether the organizations' individual members would have had standing to proceed in their own right.

Because there is nothing in RCRA's text or history that suggests a congressional intent to erect statutory standing barriers beyond those imposed by Article III of the Constitution and because Mallinckrodt has not identified any prudential standing concerns, we focus on what is essential to establish Article III standing. Those requirements are expressed in a familiar three-part algorithm: a would-be plaintiff must demonstrate a concrete and particularized injury in fact, a causal connection that permits tracing the claimed injury to the defendant's actions, and a likelihood

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redress because it will allow the plaintiffs to tailor their behavior to the actual condition of the lower Penobscot. Consequently, Mallinckrodt's redressability argument is untenable.

that prevailing in the action will afford some redress for the injury. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61, 112 S.Ct. 2130, 119 L.Ed.2d 351 (1992); *Pagán v. Calderón*, 448 F.3d 16, 27 (1st Cir.2006). These requisites must be proved "with the manner and degree of evidence required at the successive stages of the litigation." *Lujan*, 504 U.S. at 561, 112 S.Ct. 2130. When, as now, standing is reviewed after trial, the facts establishing standing "must be supported adequately by the evidence adduced at trial." *Id.* (internal quotation marks omitted). The ultimate quotient of proof is a preponderance of the evidence. *See Perry v. Vill. of Arlington Heights*, 186 F.3d 826, 829 (7th Cir.1999).

We first dispose of an argument that verges on the specious. Mallinckrodt protests that the plaintiffs cannot have established a cognizable injury since the district court thought it appropriate to order a remedy—the study—that would determine whether mercury in the Penobscot is "having significant adverse effects" on the environment or "posing an unacceptable risk to human health." This protestation conflates the district court's finding of liability with its choice of remedy. As we shortly shall explain, probabilistic harms are legally cognizable, and the district court made a supportable finding that a sufficient probability of harm exists to satisfy the Article III standing inquiry. *See Me. People's Alliance*, 211 F.Supp.2d at 253. The fact that the court chose a remedy that aspires to furnish a degree of determinacy before fashioning further relief speaks only to the court's cautious use of discretion in selecting remedies; it does not speak to the plaintiffs' standing as of the present time.

Having dispatched this attempted sleight of hand, we proceed to more serious matters. Mallinckrodt concentrates its standing attack on the plaintiffs' ostensible failure to prove the injury-in-fact component. At trial, the plaintiffs called four witnesses from within their respective memberships, all of whom reside on or near the banks of the Penobscot River.

All four vouchsafed that they have modified their behavior due to fear of mercury contamination. Although eager to do so, none of them will eat fish or shellfish from the river nor recreate on or near it. One witness added that, but for the mercury contamination, she would harvest mussels and sell them to supplement her income. The district court credited this testimony. *Id.*

Plaintiffs in environmental suits may predicate claims of injury on aesthetic or recreational harms. *See Laidlaw*, 528 U.S. at 183, 120 S.Ct. 693; *Sierra Club v. Morton*, 405 U.S. 727, 735, 92 S.Ct. 1361, 31 L.Ed.2d 636 (1972); *Save Our Heritage, Inc. v. FAA*, 269 F.3d 49, 55 (1st Cir.2001). Still, neither a bald assertion of such a harm nor a purely subjective fear that an environmental hazard may have been created is enough to ground standing. Rather, an individual's decision to deny herself aesthetic or recreational pleasures based on concern about pollution will constitute a cognizable injury only when the concern is premised upon a realistic threat. *See Laidlaw*, 528 U.S. at 184, 120 S.Ct. 693; *see also City of Los Angeles v. Lyons*, 461 U.S. 95, 107 n. 8, 103 S.Ct. 1660, 75 L.Ed.2d 675 (1983) (explaining that "the *reality* of the threat . . . , not the plaintiff's subjective apprehensions," constitutes the cognizable injury).

In this instance, Mallinckrodt exhorts us to find that the witnesses' stated fears are unreasonable. It points out—and the record confirms—that waterways throughout Maine suffer to some extent from mercury pollution and that, therefore, it is responsible at most for a probabilistic increase in a risk that the witnesses would in any event have had to run.

There is some confusion as to the thrust of Mallinckrodt's argument. The plaintiffs read its brief, not implausibly, as arguing that these facts necessarily limit cognizable injuries to identifiable medical concerns. *See* Appellees' Br. at 54. Mallinckrodt's reply brief, however, acknowledges that the plaintiffs' principal claim of injury is for diminished enjoy-

ment of their environment and joins issue on the sufficiency of the proof in that regard. *See* Appellant's Reply Br. at 25. At bottom, this argument suggests that the plaintiffs must show that Mallinckrodt's activities created a significantly increased risk of harm to health or the environment so as to make it objectively reasonable for the plaintiffs' members to deny themselves aesthetic and recreational use of the river.

To establish an injury in fact based on a probabilistic harm, a plaintiff must show that there is a substantial probability that harm will occur. *See Warth v. Seldin*, 422 U.S. 490, 504, 95 S.Ct. 2197, 45 L.Ed.2d 343 (1975); *see also Adams v. Watson*, 10 F.3d 915, 923 (1st Cir.1993). Mallinckrodt suggests that the instant plaintiffs have not demonstrated a sufficiently probable increase in harm because of (i) Dr. Livingston's admitted uncertainty about whether any problem exists and (ii) the notion that politically accountable branches of government, not courts, are the appropriate entities to make judgments as to what risks are acceptable in modern society. Neither suggestion is convincing.

Mallinckrodt's first suggestion relies ultimately on a single snippet of Dr. Livingston's testimony, wrested from its contextual moorings. But a trial court, confronted with a complex and highly ramified factual situation, is fully entitled to consider the import of a witness's testimony as a whole. This case is a good example: Dr. Livingston testified, in effect, that the presence of a great deal of smoke justified looking for a fire. Mallinckrodt excerpts only his isolated statement that he had not actually seen a fire yet. This plucking of the record overlooks the obvious fact that the district court, drawing on the whole of Dr. Livingston's testimony as well as a plethora of other evidence, supportably concluded that "mercury is methylating downriver, and that such methylmercury is bioavailable, entering biota, and biomagnifying throughout the food web" in sufficient quantity that it may well present an imminent and substantial

danger to the environment. *Me. People's Alliance*, 211 F.Supp.2d at 251 (citation omitted). Relatedly, the court found that "the effects resulting from methylmercury exposure . . . clearly endanger reproduction, development, and overall health of the public and the environment," *id.* at 252, and that "Mallinckrodt has been a dominant source of mercury in the Penobscot River," *id.* at 255.

In other words—to return to our metaphor—the lower court discerned telltale signs that a fire might already be smoldering. In light of its warrantable findings, the court had ample reason to conclude that Mallinckrodt has created a substantial probability of increased harm to the environment. That increased risk, in turn, rendered reasonable the actions of the plaintiffs' members in abstaining from their desired enjoyment of the Penobscot.

Mallinckrodt's second suggestion is nothing less than a no-holds-barred assault on the federal courts' institutional competency. It emphasizes that the plaintiffs allege no violation of any federally prescribed discharge limits, and then treats this omission as dispositive. *See* Appellant's Br. at 27 (asserting that "in the absence of any finding by [EPA]," courts are not equipped to determine whether "the medical and scientific uncertainties created by mercury in the Penobscot create an *unacceptable* increased risk of harm" (emphasis in original)).

This postulate proceeds from a two-part premise. First, in terms of environmental regulation—where important policy tradeoffs must be made between protection and progress—the only injuries that satisfy the criteria for Article III standing are those injuries that are "unacceptable"; and second, the political branches alone, not courts, have the expertise and accountability to determine which injuries society must be prepared to tolerate. In Mallinckrodt's view, this need to restrict cognizable injuries to "unacceptable" injuries is

especially acute where, as in this case, the asserted harms are probabilistic.

Mallinckrodt provides scant authority for an argument that has such breathtaking ramifications for the scope of judicial power. Its notion of acceptability is apparently derived from a single, quarter-century-old opinion, in which a respected court cautioned that judges cannot "formulate policy with respect to what [environmental] risks are acceptable." *Envtl. Def. Fund v. EPA*, 598 F.2d 62, 83-84 (D.C.Cir.1978). That court, however, was reviewing a challenge to an EPA regulation based on an alleged lack of substantial evidence. There is no discussion either of standing or of Article III's limits on judicial power. The opinion, therefore, affords no solid foundation for the proposition that Mallinckrodt asserts.[6]

In a related vein, Mallinckrodt argues that a grant of standing in this case would be tantamount to judicial usurpation of regulatory authority because it would permit "private parties to attack EPA risk assessments collaterally, using the very risks EPA deemed acceptable to establish standing and liability, with no deference afforded to EPA's policy judgment." Appellant's Reply Br. at 27-28. But the ingredients that comprise what Mallinckrodt sees as a recipe for disaster—the relatively broad scope of citizens' rights to sue polluters, the existence of liability in such suits, and the less-than-total deference afforded to agency inaction—all turn on legislative choices. Congress has elected to create a cause of action for affected citizens notwithstanding the absence of any EPA-sponsored standard. While we share Mallinckrodt's belief that it would be a usurpation of legislative prerogative for a court to assume policymaking control over environmental

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[6] Mallinckrodt's other citations—*National Lime Ass'n v. EPA*, 627 F.2d 416, 433 n. 48 (D.C.Cir.1980), and *Industrial Union Department v. American Petroleum Institute*, 448 U.S. 607, 662-63, 100 S.Ct. 2844, 65 L.Ed.2d 1010 (1980) (Burger, C.J., concurring)—likewise concern judicial review of agency regulations. They too are inapposite.

regulation, it would be no less offensive a usurpation for a court to refuse to undertake a task validly entrusted to it by Congress. In the last analysis, Article III requires a cognizable injury; it does not speak to the wisdom of the legislature's actions in providing redress for that injury.

We add an eschatocol of sorts. In rejecting Mallinckrodt's arguments as to standing, we remain confident that Congress has not asked federal courts to perform tasks that are beyond their institutional competency. In our view, courts are capable of assessing probabilistic injuries. Moreover, nuisance principles contribute heavily to the doctrinal template that underbraces statutes like RCRA, *see, e.g., Cox v. City of Dallas*, 256 F.3d 281, 289 (5th Cir.2001), and the tasks involved in adjudicating environmental cases are well within the federal courts' accustomed domain. While courts can (and do) benefit from available agency expertise, it is an insupportable leap of logic to maintain that, in the absence of such input, claims of injury are not cognizable at all.

That ends this aspect of the matter. For the reasons discussed above, we hold that the plaintiffs have standing to sue under RCRA § 7002(a)(1)(B). We turn, then, to the meat of the appeal.

III. THE MERITS

This case revolves around the meaning and purport of RCRA § 7002(a)(1)(B), a statute that, as described above, allows citizens to sue persons or firms whose handling of solid or hazardous waste "may present an imminent and substantial endangerment to health or the environment." *Id.* The district court read this language as meaning that such suits could be brought to alleviate reasonable medical or scientific concerns. *Me. People's Alliance*, 211 F.Supp.2d at 252. Mallinckrodt urges a more circumscribed interpretation. To the extent that this interpretive controversy presents a

question of statutory construction, we afford de novo review.[7] *See Lattab v. Ashcroft*, 384 F.3d 8, 21 (1st Cir.2004).

An historical perspective illustrates the strength of the current against which Mallinckrodt is swimming. Congress enacted RCRA in 1976, Pub.L. No. 94-580, 90 Stat. 2795, with the avowed intention of closing "the last remaining loophole in environmental law, that of unregulated land disposal of discarded materials and hazardous waste." H.R.Rep. No. 94-1491, pt. 1, at 4, *reprinted in* 1976 U.S.C.C.A.N. 6238, 6241. In its original iteration, RCRA § 7002 (now codified in pertinent part at 42 U.S.C. § 6972(a)(1)(A)) offered citizens the opportunity to bring suit against a polluter only when the polluter was alleged to be in violation of a permit, standard, regulation, condition, requirement, or order issued by EPA. At the same time, RCRA created a cause of action, available exclusively to the EPA Administrator, for cases in which the "disposal of any solid waste or hazardous waste is presenting an imminent and substantial endangerment to health or the environment." RCRA § 7003 (codified as amended at 42 U.S.C. § 6973(a)). In suits brought under this latter provision, federal district courts were granted broad remedial authority to "restrain" polluters and take "such other action as may be necessary." *Id.*

Pertinently we think, Congress later *loosened* the standard for liability under section 7003. This transpired four years later when Congress passed the Solid Waste Disposal Act Amendments of 1980. That legislation amended section 7003 by substituting the words "may present" for the words "is presenting." Pub.L. No. 96-482, § 25, 94 Stat. 2334, 2348.

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[7] Mallinckrodt has pitched this aspect of its appeal exclusively in terms of statutory construction. Had it challenged the district court's application of the law to the facts, our review would have been more deferential. *See, e.g., Interfaith Cmty. Org. v. Honeywell Int'l, Inc.*, 399 F.3d 248, 254 (3d Cir.2005) (advocating "clear error" review).

In *United States v. Price*, 688 F.2d 204 (3d Cir.1982), a seminal RCRA § 7003 case, a district court found that a landfill leaking toxic substances posed an imminent and substantial danger to Atlantic City's water supply but refused to order a study of this hazard at the preliminary injunction stage. *Id.* at 209. The Third Circuit reversed, ruling that the use of the word "may" in RCRA § 7003 was intended to make the provision "expansive." *Id.* at 213. In its view, "Congress, by enacting section 7003, intended to confer upon courts the authority to grant affirmative equitable relief to the extent necessary to eliminate any risks posed by toxic waste." *Id.* at 214.

Soon thereafter, Congress passed the Hazardous and Solid Waste Amendments of 1984 (1984 amendments), Pub.L. No. 98-616, 98 Stat. 3221. The 1984 amendments introduced a new provision, RCRA § 7002(a)(1)(B), into the statutory scheme. Using language that tracked the post-1980 text of RCRA § 7003, this new provision extended to citizens the right to sue a polluter who may be causing an imminent and substantial endangerment to public health or the environment. *Id.* § 401, 98 Stat. at 3268-69. The Senate Report that accompanied the 1984 amendments approvingly cited and quoted *Price* on several occasions, specifically endorsing that court's conclusion that section 7003 is intended to give courts the tools to "eliminate any risks posed by toxic waste." S.Rep. No. 98-284, at 59 (1983).

Around this same time, the Fourth Circuit decided another RCRA § 7003 case, in which it flatly rejected the proposition that "section 7003 was designed to control pollution only in emergency situations." *United States v. Waste Indus., Inc.*, 734 F.2d 159, 165 (4th Cir.1984). The court emphasized the statute's use of the word "may" and cited *Price* approvingly.

Price and *Waste Industries* have become guideposts for courts endeavoring to interpret the counterpart language contained in RCRA § 7002(a)(1)(B). To date, at least four of our

sister circuits have construed that provision expansively. *See Interfaith Cmty. Org. v. Honeywell Int'l., Inc.*, 399 F.3d 248, 258-59 (3d Cir.2005); *Parker v. Scrap Metal Processors, Inc.*, 386 F.3d 993, 1015 (11th Cir.2004); *Cox*, 256 F.3d at 299; *Dague v. City of Burlington*, 935 F.2d 1343, 1355 (2d Cir.1991), *rev'd in part on other grounds*, 505 U.S. 557, 112 S.Ct. 2638, 120 L.Ed.2d 449 (1992). In taking this position, all four courts have emphasized the preeminence of the word "may" in defining the degree of risk needed to support RCRA § 7002(a)(1)(B)'s liability standard.

This expansiveness in construing the requisite degree of risk has largely been matched in the courts' assessment of the gravity and immediacy of the threatened harm. With one possible exception, the courts have agreed that the word "substantial" implies serious harm.[8] *See, e.g., Parker*, 386 F.3d at 1015. There has, however, been some reluctance to quantify the needed level of harm more precisely. *See, e.g., Honeywell*, 399 F.3d at 259. Imminence generally has been read to require only that the harm is of a kind that poses a near-term threat; there is no corollary requirement that the harm necessarily will occur or that the actual damage will manifest itself immediately. *See Cox*, 256 F.3d at 299-300.

Mallinckrodt argues that this long line of cases has consistently misread *Price* (which, Mallinckrodt says, only concerned remedial power, not scope of liability) and, in the bargain, has disregarded the strictures imposed by the adjectives "imminent" and "substantial." We have not had occasion to construe the reach of the citizen suit provision contained in RCRA § 7002(a)(1)(B), and we are obligated to offer our independent judgment on an issue of first impression here (which, as we shortly shall explain, coincides with

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[8] The possible exception is the Second Circuit, which, to date, has not committed to read into the statute a requirement of seriousness. *See Dague*, 935 F.2d at 1355-56.

the result reached by the other courts of appeals that have confronted the question). Accordingly, we proceed to test the mettle of the conventional construction of RCRA § 7002(a)(1)(B) against Mallinckrodt's challenge.

The district court, following the interpretive trail blazed by the four above-mentioned courts of appeals, employed the conventional construction. It began by noting that the word "endangerment" does not imply actual harm but, rather, implies only potential harm. *Me. People's Alliance*, 211 F.Supp.2d at 246. The court then noted that the statutory standard is further relaxed because of Congress's use of the word "may." *Id.* As a result, the court found RCRA § 7002(a)(1)(B) to be a "sweeping provision indicat[ing] Congress's intent 'to confer upon the courts the authority to grant affirmative equitable relief to the extent necessary to eliminate *any risk* posed by toxic waste.'" *Id.* at 246-47 (quoting *Dague,* 935 F.2d at 1355 (quoting *Price*, 688 F.2d at 214) (emphasis supplied in *Dague*)).

The court read the statute's adjectival elements in line with the breadth of the authority granted. It found that the word "imminent" connotes only that the "factors giving rise to [the harm] are present, even though the harm may not be realized for some time." *Id.* at 247. Relatedly, the court found that the word "substantial" connotes no more than "reasonable cause for concern that someone or something may be exposed" to harm. *Id.* (quoting *Raymond K. Hoxsie Real Estate Trust v. Exxon Educ. Found.*, 81 F.Supp.2d 359, 366 (D.R.I.2000) (internal quotation marks omitted)). A "reasonable medical concern" would, the court said, be sufficient to ground liability under the statute. *Id.* at 252. The court's only explicit limitation on the availability of relief was when "the risk of harm is remote in time, completely speculative in nature, or de minimis in degree." *Id.* at 247 (quoting *United States v. Reilly Tar & Chem. Corp.*, 546 F.Supp. 1100, 1109 (D.Minn.1982)). Mallinckrodt balks at this interpretation of

RCRA § 7002(a)(1)(B) for a host of reasons. It argues that this construction ignores the plain meaning of the phrase "imminent and substantial endangerment," does violence to the internal coherence of RCRA by overlooking the hierarchy of standards contained within that statute, tampers with Congress's wise delegation of policymaking to an expert agency, and frustrates congressional intent. We address each of these criticisms in turn.

Mallinckrodt's textual argument rests on the premise that the courts that heretofore have explicated section 7002(a)(1)(B)'s liability standard have been blinded by the glare of the word "may" and have lost sight of the plain meaning of the words "imminent and substantial." In Mallinckrodt's view, the phrase "may present an imminent and substantial endangerment," when read as a whole, requires a risk of grave harm that is more likely than not to occur. Mallinckrodt deduces this construction from a Rosetta Stone that is part case law and part lexicography.

The word "endangerment," Mallinckrodt says somewhat tautologically, is "the state of being placed in danger." Webster's Third New International Dictionary 748 (1993). In that connection, it defines danger as "exposed to harm" or "peril." *Id.* at 573 (excess capitalization omitted). To elucidate the meaning of "may," Mallinckrodt points to a sixty-year old Supreme Court decision that defines "may," as used in section 2(a) of the Clayton Act, as "probably." *Corn Prods. Refining Co. v. FTC*, 324 U.S. 726, 738, 65 S.Ct. 961, 89 L.Ed. 1320 (1945). Finally, to give content to the phrase "imminent and substantial," Mallinckrodt invokes case law suggesting that, in other environmental contexts, the unadorned word "endanger" implies a lower standard than that denoted by the phrase "imminent and substantial endangerment." *See Ethyl Corp. v. EPA*, 541 F.2d 1, 20 n. 36 (D.C.Cir.1976) (en banc); *Reserve Mining Co. v. EPA*, 514 F.2d 492, 528 (8th Cir.1975) (en banc).

Mallinckrodt's textual argument makes sense—but only to a point. While the decisions in *Ethyl Corp.* and *Reserve Mining* are some evidence that, *as of 1976*, the phrase "imminent and substantial endangerment" was thought to denote a heightened standard,[9] the relevant question is how that term was understood *in 1984* (when section 7002(a)(1)(B) was enacted). The Senate Report on the 1984 amendments defines the word "endangerment" separately from the phrase "imminent and substantial." *See* S.Rep. No. 98-284, *supra,* at 59. Mallinckrodt's criticism fails to account either for that circumstance or for Congress's insertion, in 1980, of the word "may" into section 7003 and its subsequent use in section 7002. That word does not appear at all in the statute considered in *Reserve Mining*, 514 F.2d at 528 & n. 70 (citing 33 U.S.C. § 1364). In *Ethyl Corp.*, one of the referenced statutes does use the word "may," but that court did not parse the entire sentence and looked only to the words "imminent and substantial." *See Ethyl Corp.*, 541 F.2d at 20 n. 36 (citing 42 U.S.C. § 300i). We also note that statutes referenced in *Ethyl Corp.* and *Reserve Mining* bore the subtitle "Emergency Powers"; in contrast, neither section 7002 nor section 7003 carry such a label.

The sockdolager, we think, is that "words are like chameleons; they frequently have different shades of meaning depending upon the circumstances." *United States v. Romain*, 393 F.3d 63, 74 (1st Cir.2004). The terrain of the Clayton Act and provisions specifically classified as conferring emergency powers are sufficiently distinct in subject

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[9] Mallinckrodt is correct in noting that the district court, which cited both *Ethyl Corp.* and *Reserve Mining, see Me. People's Alliance*, 211 F.Supp.2d at 246, failed to acknowledge that those cases were defining the term "endangerment" in contrast with "imminent and substantial endangerment." This observation may weaken the persuasive power of the district court's reasoning, but it hardly answers the definitional question.

matter from RCRA's terrain. Thus, we are unprepared to say that the nuances attached to the phrase "may present an imminent and substantial endangerment" by judicial decisions in those other contexts should be transplanted root and branch into the differently textured soil of RCRA § 7002(a)(1)(B)—a statute enacted by a different Congress at a different time for a different purpose. We conclude, therefore, that Mallinckrodt's textual argument does not carry the day: the interpretive question before us cannot be resolved favorably to Mallinckrodt on the basis of plain meaning alone.

Mallinckrodt next argues that the conventional interpretation of section 7002(a)(1)(B) drains the phrase "imminent and substantial" of any meaning because RCRA already defines "hazardous waste" as material that will cause an increase in mortality or serious illness or "pose a substantial present or potential hazard to human health or the environment." 42 U.S.C. § 6903(5). Thus, any release of hazardous waste would satisfy the conventional construction of RCRA § 7002(a)(1)(B), and the requirement that such a release create an "imminent and substantial endangerment" would be superfluous.

This argument is easily dispatched. In terms, section 7002(a)(1)(B) applies to *both* solid waste and hazardous waste. RCRA's definition of "solid waste" does not share the same characteristics as its definition of "hazardous waste," so to that extent the phrase "imminent and substantial" retains an independent meaning.

Relatedly, Mallinckrodt asserts that the conventional interpretation of "imminent and substantial endangerment" overlooks RCRA's commitment to a hierarchy of risks in which "imminent and substantial endangerment" ranks at or near the top. This argument builds on the idea that Congress employed relatively lenient risk standards elsewhere in RCRA. *See, e.g.*, RCRA § 4004(a), codified at 42 U.S.C. § 6944(a) (providing that sanitary landfills must have "no reasonable

probability of adverse effects on health or the environment"). Correspondingly, the word "endangerment" is used in other contexts in connection with "imminent danger of death or serious bodily injury." *See, e.g.*, RCRA § 3008(e), codified at 42 U.S.C. § 6928(e) (defining the crime of "knowing endangerment"). Thus, the decision to require an "imminent and substantial endangerment" must signify a special, harder-to-achieve benchmark.

This argument has some superficial appeal. After all, it is a cardinal rule that courts should strive to interpret statutes as a whole and to give effect to every word and phrase. *King v. St. Vincent Hosp.*, 502 U.S. 215, 221, 112 S.Ct. 570, 116 L.Ed.2d 578 (1991); *United States v. Ven-Fuel, Inc.*, 758 F.2d 741, 751-52 (1st Cir.1985). But the conventional interpretation of section 7002(a)(1)(B) gives full effect to the "imminent and substantial endangerment" language; it merely eschews the mechanical cross-referencing, not mandated by Congress, that Mallinckrodt advocates. That, in itself, should not raise eyebrows: where the various parts of a complicated and multifaceted statutory scheme discuss significantly different topics and function within different paradigms, mechanical cross-referencing, not mandated by Congress, can lead to confusion rather than clarity.

This is such a case. There is no meaningful parallelism between section 7002(a)(1)(B) and the provisions that Mallinckrodt seeks to use as comparators. For example, RCRA § 3008(e) is a *criminal* provision. Given the divergent concerns that drive criminal statutes as opposed to civil remedial statutes, it should not be surprising that the same word may vary in meaning as the context shifts. Indeed, if "endangerment" as defined in section 3008(e) were to mean precisely what it means in section 7002(a)(1)(B), the word "imminent" would be rendered utterly redundant—the statute would, in effect, require an imminent imminence—thus trans-

gressing the very canon of construction that Mallinckrodt labors to invoke.

Mallinckrodt offers a more sophisticated version of the argument that RCRA creates a hierarchy of risks when it posits that the statute's most expansive remedies are reserved for the greatest risks. In this regard, it points out that under RCRA § 3019(b), EPA can commission a health assessment whenever it believes that a landfill "poses a substantial potential risk to human health," 42 U.S.C. § 6939a(b); under RCRA § 3013, EPA can order the owner or operator of a facility to conduct monitoring, testing, and analysis as long as the facility "may present a substantial hazard to human health or the environment," *id.* § 6934(a); and under RCRA § 7003, which has a risk standard identical to RCRA § 7002(a)(1)(B), EPA can act to protect the public health, *see id.* § 6973(a). From this statutory melange, Mallinckrodt concludes that only the immediate threat of grave harm is sufficient to trigger such far-reaching remedies.

The notion that a hierarchy of risks and remedies exists within RCRA is not easily disproved. What is fairly clear, however, is that any such hierarchy is well-disguised; if one exists, it seems more a product of fortuity than a product of a purposeful legislative initiative. We explain briefly.

Section 3019(b) was first enacted in 1984, Pub.L. No. 98-616, § 247, 98 Stat. 3221, 3265; section 3013 in 1980, Pub.L. No. 96-482, § 17(a), 94 Stat. 2334, 2344; and section 7003 (previously cited) in 1976 (though that provision was amended both in 1980 and 1984). Given that the changes were made to different subtitles of the statute at different times, such incrementalism weakens (perhaps to the vanishing point) any inference that Congress specifically intended a strict hierarchy of harms. If Congress actually wants a delineated hierarchy of risks and remedies, it will have to say so more distinctly. *Cf. King*, 502 U.S. at 222, 112 S.Ct.

570 (construing that "differences do not necessarily make hierarchies").

This brings us to Mallinckrodt's separation-of-powers argument. It asseverates that RCRA's allocation of policy-making authority to EPA is such that the citizen suit provision must be viewed as an "interstitial, emergency-type remedy." Appellant's Br. at 45. Mallinckrodt asserts that this policy-aking authority necessarily includes responsibility for setting pollution standards and that, in setting such standards, EPA, consistent with the tradeoffs inherent in setting virtually any standard, does not aspire to eliminate all risks.

This assertion is founded on an indisputable verity: the principal responsibility for implementing and enforcing RCRA resides with EPA, not with citizens acting as private attorneys general. *See Meghrig v. KFC Western, Inc.*, 516 U.S. 479, 483-84, 116 S.Ct. 1251, 134 L.Ed.2d 121 (1996). We disagree, however, with Mallinckrodt's contention that the conventional interpretation of section 7002(a)(1)(B)—the interpretation espoused by our sister circuits and by the court below—is inconsistent with this scheme because it allows courts to second-guess EPA's judgments too freely and affords relief based upon harms that EPA has found acceptable.

Mallinckrodt attempts to bolster this argument by citing a plethora of cases for the proposition that environmental standards should be set by EPA, not the courts. *See, e.g., Amoco Oil Co. v. EPA*, 501 F.2d 722, 735 (D.C.Cir.1974). This proposition is unremarkable, and we take no issue with it. We agree, moreover, that courts must show appropriate respect for EPA's judgments. *See Envtl. Def. Fund*, 598 F.2d at 83-84. But allowing citizen suits to proceed is not the functional equivalent of allowing courts to hijack EPA's regulatory authority and weave safety standards out of whole cloth.

The case at hand illustrates this point. Although EPA (acting in concert with MDEP) was leaning toward the adoption of media protection standards that would not have required downriver remediation, no standards had been adopted at the time the district court acted (nor, for that matter, does the record suggest that any have been adopted up to the present time). Furthermore, EPA has never taken the position—or even so much as hinted—that correction of the Plant's effects on downriver pollution is bad policy. Thus, this is not a situation in which a court has presumed to grant relief that flies in the face of an express EPA authorization of certain conduct.

We add, moreover, that the district court has been sensitive to separation-of-powers concerns. On three different occasions, it considered and thoughtfully rejected primary jurisdiction challenges.[10] And the court sensibly left open the possibility that "primary jurisdiction concerns could arise in the future." *Me. People's Alliance*, 211 F.Supp.2d at 255. That presumably would cover the contingency of changed circumstances that would eventuate should EPA, some day, actually engage in an enforcement action pertinent to the condition of the lower Penobscot.

The fact that courts retain some latitude in this area is not in any sense incompatible with the statutory scheme. There are four different ways that EPA can preempt a citizen suit—and all four require that EPA itself take diligent steps to remedy looming environmental harm. *See* RCRA § 7002(b)(2)(B) (codified at 42 U.S.C. § 6972(b)(2)(B)). That same provision narrowly circumscribes EPA's preemptive power; it states that, when preemption is premised on an EPA order, citizen suits are "prohibited only as to the scope and duration of the administrative order." The short of it is

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[10] Mallinckrodt has opted not to revisit the district court's rejection of these challenges in this appeal.

that Congress has told the federal courts that they are not required to steer clear of an area simply because that area might be a focus of future EPA activity.[11]

Mallinckrodt tries to embellish its separation-of-powers argument in another way as well; it maintains that section 7002(a) embodies a strong preference for permit-violation suits as opposed to imminent and substantial endangerment suits. This attempted embellishment does not withstand scrutiny.

When not premised on the title related to hazardous waste, a permit-violation suit may be brought after a 60-day waiting period while an imminent and substantial endangerment suit requires observance of a 90-day waiting period. *Compare* RCRA § 7002(b)(1) (codified at 42 U.S.C. § 6972(b)(1)), *with* RCRA § 7002(b)(2) (codified at § 6972(b)(2)). This is the only substantive difference between permit-violation suits and suits alleging imminent and substantial endangerment. Given the relatively minor nature of that lone disparity, we conclude, without serious question, that the structure of the statutory scheme does not offer any persuasive evidence that Congress sought to disfavor suits alleging imminent and substantial endangerment.

Mallinckrodt's emphasis on statutory structure includes an assertion that giving section 7002(a)(1)(B) a broad reading will render nugatory the right to bring permit-violation actions and the like under RCRA § 7002(a)(1)(A). *See* Appellant's Reply Br. at 15-16 (querying whether, if "there is a big hole in a fence for the big cat, need there be a small one for the small one?") (citation and internal quotation marks omitted). The flaw in this argument, as it pertains to this

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[11] This is not meant to suggest that a private party can interfere with an EPA prosecution or disturb the finality of a negotiated settlement. The opposite is true. *See Supporters to Oppose Pollution, Inc. v. Heritage Group*, 973 F.2d 1320, 1323-25 (7th Cir.1992).

case, is that the two holes were drilled at different times. Congress placed the "imminent and substantial endangerment" gloss on RCRA's citizen suit provision eight years *after* making provision for permit-violation suits. Thus, the more appropriate question is: "If Congress deliberately cut a second hole in the fence, is there any reason not to accept the obvious premise that Congress wanted to increase the ease with which cats of all sizes could come through the fence?"

Insofar as Mallinckrodt theorizes that courts lack the competence to function under the conventional interpretation of RCRA § 7002(a)(1)(B), we reject its thesis. To be sure, Mallinckrodt cites case after case for the proposition that forging policy is a task that non-expert, non-accountable judges should not undertake. *See, e.g., Chevron U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 866, 104 S.Ct. 2778, 81 L.Ed.2d 694 (1984); *United States v. Gilman*, 347 U.S. 507, 511-13, 74 S.Ct. 695, 98 L.Ed. 898 (1954). Some of these cases suggest that judicial policymaking in the environmental sphere is especially inappropriate because judges lack special competence to interpret complex scientific, technical, and medical data. *See, e.g., Safe Food & Fertil. v. EPA*, 365 F.3d 46, 49 (D.C.Cir.2004).

This view sells the federal judiciary short: federal courts have proven, over time, that they are equipped to adjudicate individual cases, regardless of the complexity of the issues involved. Federal courts are often called upon to make evaluative judgments in highly technical areas (patent litigation is an excellent example).[12] Performing that quintessentially judicial function in the environmental sphere is not tantamount to rewriting environmental policy. To the contrary, what the lower court did here—listening to the testimony of

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[12] Indeed, even on Mallinckrodt's crabbed interpretation of section 7002(a)(1)(B), courts would have to engage in exactly the type of evidence-weighing that Mallinckrodt says is beyond their competence.

expert witnesses, assessing their credibility, and determining whether or not a litigant has carried the devoir of persuasion—is very much within the core competency of a federal district court.

As a last-ditch measure, Mallinckrodt strives to convince us that Congress's revealed intent, as reflected in the legislative history, counsels in favor of a narrow reading of section 7002(a)(1)(B). We are not persuaded.

The argument shapes up along the following lines. Citing S.Rep. No. 98-284, *supra*, at 56, Mallinckrodt reads this archival information as confirming that section 7002(a)(1)(B) was intended to operate "exactly the same" as section 7003. Building on that foundation, Mallinckrodt notes that section 7003, when enacted in 1976, was envisioned as a means of providing "emergency authority." S.Rep. No. 94-988, at 16 (1976). This gloss, though artful, mixes plums and pomegranates.

What is relevant to a congressional statement, in 1984, that section 7002(a)(1)(B) is intended to operate in the same way as section 7003, is not how Congress viewed section 7003 at the time of its original passage but, rather, how Congress understood section 7003 *in 1984*. This is especially significant because section 7003 was not worded the same in 1984 as it was in 1976. We think it is clear that the 1980 amendment to the provision, substituting "may present" for "is presenting," fundamentally altered how this provision was understood.

The proof of the pudding is in the legislative archives. We refer particularly to the way in which the provision was discussed during testimony taken in anticipation of the 1984 amendments.

At that time, the House of Representatives was told authoritatively that section 7003 contained "very broad and general statutory language" and that the government, "over

the last several years," had been advocating "as broad an interpretation [of it] as possible." *Solid Waste Disposal Act Amendments of 1983: Hearing on S. 757 Before the Subcomm. on Envtl. Pollution of the S. Comm. on Env't and Public Works*, 98th Cong. 17, 29 (1983) (statement of Carol Dinkins, Asst. Atty. Gen., Land and Nat. Res. Div., Dep't of Justice). It also learned that the Department of Justice viewed section 7003 as "loosely worded," so that it conveyed "extraordinary, broad law enforcement powers." *Id.* at 110, 120.

The Senate's discussion of section 7003 in the course of considering the 1984 amendments likewise suggests an expansive view of the provision. The Senate Report enthusiastically quotes *Price* for the proposition that section 7003 is "intended to confer upon the courts the authority to grant affirmative equitable relief to the extent necessary to eliminate any risks posed by toxic wastes."[13] S.Rep. No. 98-284, *supra*, at 59 (quoting *Price*, 688 F.2d at 214). It went on to observe that the "primary intent of the provision is to protect human health and the environment." *Id.* Thus, there is good reason to believe that Congress, intending to create a provision modeled along the lines of section 7003, understood that section as offering much more than emergency authority.

The legislative history is also at odds with Mallinckrodt's argument that the conventional interpretation of section 7002(a)(1)(B) usurps EPA's policymaking role. In parsing this legislative history, it is important to recognize that Congress, in 1984, was acting against a background finding that there were "serious gaps" in RCRA, that EPA's enforcement actions were characterized by "inadequate effort," and

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[13] Mallinckrodt's major criticism of the courts that have relied upon *Price* when construing section 7002(a)(1)(B) is that liability was not contested in *Price* and that, therefore, the quoted language must have referred to *remedial* authority. This criticism is undercut by the fact that the Senate Report quotes *Price* when discussing the liability standard.

that EPA "ha[d] not been diligent in vigorously pursuing a tough enforcement program." H.R.Rep. No. 98-198, pt. 1, at 20 (1983), *reprinted in* 1984 U.S.C.C.A.N. 5576, 5578-79. Congress had heard, and apparently credited, testimony from a former Assistant Attorney General about "an astonishing two years of mismanagement at EPA in which the enforcement of the hazardous waste disposal laws suffered greatly." *Id.*, pt. 3, at 6, *reprinted in* 1984 U.S.C.C.A.N. 5636, 5641. Given this mise-en-scène, it seems counter-intuitive to suggest that Congress intended to erect an enforcement structure built on exaggerated deference to EPA.

To be sure, the legislative history reflects the anticipation that "courts will accord some deference to [EPA's] technical findings concerning the nature and extent of endangerment." S.Rep. No. 98-284, *supra*, at 56. But we do not think that "some deference" means either total obeisance or blind allegiance. Congress desired a "tough enforcement program" and found that EPA had not been "diligent in vigorously pursuing" one. Citizen suits were meant to fill the resultant void.[14]

We are unimpressed by Mallinckrodt's citation to language in the House Report to the effect that section 7002(a)(1)(B) was designed to create a "limited right" for citizens to sue. H.R.Rep. No. 98-198, *supra*, pt. 1, at 53, 1984 U.S.C.C.A.N. at 5612. The very next sentence in that report explains the nature of the limitation, namely, that this "right can only be exercised if the Administrator (following notice of the intended litigation) fails to file an action under 7003." *Id.* The

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[14] To the extent that Congress, within this new regime, intended to allow EPA to defend its own policymaking prerogatives, it appears to have placed the onus on EPA, rather than the courts, to stand as the sentry at the gates. *See* S.Rep. No. 98-284, *supra*, at 56 (explaining that "if the Administrator believes a citizen suit . . . is not being prosecuted in the public interest, he may exercise the right to intervene . . . and seek from the court restrictions or conditions upon the citizen suit").

conventional interpretation of the statute does not in any way offend this directive.

Finally, Mallinckrodt spotlights a comment from the floor debate on section 7002, in which the bill's sponsor characterized the provision as giving citizens the power "to abate the most serious kinds of hazardous waste situations: Those that may present an imminent and substantial endangerment." 130 Cong. Rec.2081, 2815 (1984) (statement of Sen. Mitchell). This one remark cannot outweigh the substantial countervailing evidence that the citizen suit provision was intended to empower private citizens by granting them relatively broad authority to litigate when EPA had not acted in the face of a reasonable prospect of serious, near-term harm. *See Weinberger v. Rossi*, 456 U.S. 25, 35, 102 S.Ct. 1510, 71 L.Ed.2d 715 (1982).

Legislative history is often a mixed bag. Parties frequently are able to mine nuggets from it selectively, picking and choosing isolated statements that serve particular (sometimes conflicting) ends. Here, the legislative history is less than pellucid. On the whole, however, it tends to support an expansive reading of the "imminent and substantial endangerment" standard for liability under RCRA § 7002(a)(1)(B).

To sum up, the combination of the word "may" with the word "endanger," both of which are probabilistic, leads us to conclude that a reasonable prospect of future harm is adequate to engage the gears of RCRA § 7002(a)(1)(B) so long as the threat is near-term and involves potentially serious harm. The language, structure, purpose, and legislative history of the provision will not comfortably accommodate the more restricted reading that Mallinckrodt espouses. While there may be good and wise reasons to adopt a regime in which EPA determinations of environmental liability are exclusive, it is Congress's place, not ours, to construct such a regime. To this date, Congress has not done so.

Given our conclusion that the conventional interpretation of RCRA § 7002(a)(1)(B) is correct, the remainder of the liability inquiry falls neatly into place. None of Mallinckrodt's arguments persuade us that the district court either misconstrued this standard or misapplied it to the facts of this case. While an imminent and substantial endangerment requires a reasonable prospect of a near-term threat of serious potential harm, the court below made supportable findings that suffice to bring this case within the compass of that standard. *See, e.g., Me. People's Alliance*, 211 F.Supp.2d at 245 (concluding that methylmercury is a "highly toxic substance"); *id.* at 251 (concluding that, in an aquatic system, "methylation is a continuous process that can go on for decades"). Based on these and other well-founded findings, the plaintiffs established that the potential risk from mercury is serious and likely to be present here and now. In turn, these findings support a conclusion that, as the district court held, there may be an imminent and substantial endangerment to the lower Penobscot River. No more is exigible.

IV. THE REMEDY

Our environmental odyssey is not yet finished. Mallinckrodt contends that the district court committed an abuse of discretion in ordering it to fund a study of the lower Penobscot.

This contention is rooted in the notion that a court must balance the relevant harms before granting injunctive relief under an environmental statute—even if the statute specifically authorizes that type of relief. *See United States v. Bethlehem Steel Corp.*, 38 F.3d 862, 867 (7th Cir.1994). Mallinckrodt would have us achieve this balance by applying the familiar four-part framework for determining the appropriateness of injunctive relief. Under that framework, the injunction-seeker "must demonstrate: (1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that

injury; (3) that, considering the balance of hardships between the [parties], a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction." *eBay Inc. v. MercExchange, L.L.C.*, ___ U.S. ___, ___, 126 S.Ct. 1837, 1839, 164 L.Ed.2d 641 (2006).

Conceptually, we agree with Mallinckrodt that a trial court, in an environmental case, should consider the balance of relevant harms before granting injunctive relief, even though the statute itself authorizes such relief. The familiar four-part framework for injunctive relief is a suitable guide in such situations. We caution, however, that the operation of that framework is inevitably colored by the nature of the case and the purposes of the underlying environmental statute (here, RCRA).

Against this backdrop, Mallinckrodt insists that the district court mishandled the third of the four enumerated elements by failing adequately to account for the onerous hardships that the study would impose and contrast those hardships with the meager benefits that the study might generate. In a nutshell, Mallinckrodt's position is that the study will saddle it with a staggering economic burden—a burden so open-ended that the overall cost cannot be predicted with any assurance—yet will yield supposed benefits to the plaintiffs' members that are at best speculative and at worst ephemeral. In this regard, Mallinckrodt stresses that it is an open question whether the lower Penobscot is actually in need of any remediation.[15]

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[15] Mallinckrodt suggests that because Dr. Livingston acknowledged a dearth of information concerning the current condition of the lower Penobscot, the district court did not have sufficient facts before it to make an informed weighing. It also suggests that the court neglected to accord due respect to EPA's tentative view that the proposed media protection standards would adequately ensure the river's safety. Whatever force these suggestions may have—and we do not imply that they have any—they go mainly to liability, not remedy.

One difficulty with Mallinckrodt's position is that it treats this injunction like a garden-variety injunction and, in the bargain, undervalues the extent of the equitable discretion possessed by a district court after a finding of liability under RCRA § 7002(a)(1)(B). While Mallinckrodt's hardships are relevant to the acceptability of a RCRA remedy, the argument that hardship must always be outweighed by deliverable benefits offends the logic of *Price*. Even on Mallinckrodt's restrictive reading of that decision, *Price* holds that "Congress sought to invoke the broad and flexible equity powers of the federal courts in instances where hazardous wastes threaten [ ] human health." 688 F.2d at 211.

Ironically, Mallinckrodt dresses this argument in the raiment of a defense of judicial prerogatives. It cites *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 313, 102 S.Ct. 1798, 72 L.Ed.2d 91 (1982), for the proposition that judges should not lightly assume that Congress has stripped courts of their equitable discretion. But that is a red herring: while it is true that a district court is not commanded, regardless of the circumstances, to issue an injunction after a finding of liability, the court below was under no misapprehension on this score. In reality, Mallinckrodt wishes to restrict, not preserve, the equitable discretion of the district courts, and the case law that it cites is therefore beside the point.

In reviewing a district courts exercise of its equitable discretion under such circumstances, we think it fully appropriate to acknowledge the statutory scheme under which liability was found. Given the strong statement in *Price*, embraced by the Senate Report, advocating the exercise of equitable remediation of environmental hazards, we perceive a congressional thumb on the scale in favor of remediation. With this backdrop in place, we are unwilling to say that the district court abused its discretion either by starting with the proposition that its primary concern ought to be how best to remedy a potentially serious near-term environmental hazard

or by granting relief notwithstanding the absence of a showing that the remedy's demonstrable benefits exceeded its probable costs.

This is not to say that the costs associated with injunctive relief are immaterial; we can imagine circumstances in which the expense entailed in carrying out a particular remedial plan might dwarf the potential benefits to the environment or to human health. Here, however, the anodyne chosen by the district court does not seem so vastly disproportionate to the threatened harm as to warrant, from the vantage point of a cold appellate record, a recalibration of the balance.

This conclusion is reinforced by the fact that Mallinckrodt has not identified any less burdensome, more cost-effective remedy that the court could have imposed to address the perceived environmental harm.[16] Where, as here, a polluter has failed to articulate a "nice adjustment and reconciliation between the public interest and private needs," *Hecht Co. v. Bowles*, 321 U.S. 321, 329, 64 S.Ct. 587, 88 L.Ed. 754 (1944), a burdensomeness argument rarely will gain much traction.

Taking a slightly different tack, Mallinckrodt characterizes the study-plan order as unfair. It should not be forced to pay

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[16] Mallinckrodt does mention, albeit in passing, that the district court committed an abuse of discretion in not "requiring an estimate of [the study's] overall costs." Appellant's Br. at 62. Although it certainly would be preferable for a court to establish with some exactitude the extent of the financial burden imposed by a particular remedy, that degree of precision is sometimes infeasible or impractical. The court below was cognizant of this shortcoming and took pains to note in the order approving the study plan, entered on August 10, 2005, that "if necessary and at the appropriate time, the Court will require the preparation by the Study Panel of a budget formulation for any remedial plan or effort which may result from the first phase" of the study. Given the complex nature of the situation and the existence of this safety valve, we find the absence of more definitive cost parameters tolerable.

the entire cost of the study, it complains, because it is not the only entity to have contributed to the pollution of the lower Penobscot. That plaint rings hollow. While Mallinckrodt was not the sole source of mercury contamination, it was a dominant one, so in that sense its claim of inequitable treatment comprises more cry than wool.

At any rate, RCRA liability, generally speaking, is joint and several. *See Cox*, 256 F.3d at 301 n. 37. The joint and several nature of environmental liability makes it fitting to hold a single polluter responsible for the totality of the damage where, as here, the harm is indivisible. *See id.*

We have said enough on this score. Once liability has been found, equitable relief in RCRA citizen suits is largely in the informed discretion of the trial court. For aught that appears, the court below did not abuse this discretion in its choice of a condign remedy.

V. CONCLUSION

We need go no further. Despite an impressive array of arguments, skillfully presented by extraordinarily able counsel, Mallinckrodt has not persuaded us that the plaintiffs lack standing to sue, that its cramped interpretation of RCRA § 7002(a)(1)(B) is what Congress had in mind, or that the district court acted outside the realm of its discretion in fashioning a remedy for the threatened harm. Consequently, we uphold the district court's rulings in all respects.

Affirmed.

APPENDIX B

UNITED STATES DISTRICT COURT
DISTRICT OF MAINE

Civil No. 00-69-B-C

MAINE PEOPLES ALLIANCE, and
NATURAL RESOURCES DEFENSE COUNCIL, INC.,
Plaintiffs,

v.

HOLTRACHEM MANUFACTURING COMPANY, LLC, and
MALLINCKRODT, INC.,
Defendants.

ORDER APPROVING STUDY PLAN

The Study Panel has submitted its "Study Plan for Evaluation of the Mercury Contamination of the Penobscot River/ Estuary, Maine" dated July 2005 (hereafter "Study Plan") to the Court and the parties have now submitted their comments and objections thereto. After reviewing the Study Plan and giving full consideration to the issues raised by the parties in their comments and objections to the Study Plan, the Court is satisfied, based on the expertise and the thorough scientific efforts and analyses of the Study Panel and its recommendations, that the Study Plan provides appropriate procedures and mechanisms to determine: (1) the extent of the harm resulting from mercury contamination to the Penobscot River/ Bay system south of the Holtrachem plant site at Orrington, Maine; (2) the need for and feasibility of a remediation plan to effectively address the present effects of such existing harm, if any; and (3) the elements of and timetable for the execution of the appropriate remediation plan to address the harm existing as a result of mercury

contamination. However, if necessary and at the appropriate time, the Court will require the preparation by the Study Panel of a budget formulation for any remedial plan or effort which may result from the first phase of the Study Plan for submission to the Court and the parties before commencement of such remedial plan or effort.

Accordingly, the Court APPROVES the Study Plan and ORDERS that the Study Panel proceed forthwith with its selection of a Project Manager and the work outlined in the Study Plan.

/s/ Gene Carter
GENE CARTER
Senior United States District Judge

Dated at Portland, Maine this 10th day of August, 2005.

APPENDIX C

UNITED STATES DISTRICT COURT
DISTRICT OF MAINE

No. 00-69-B-C

MAINE PEOPLES ALLIANCE and
NATURAL RESOURCES DEFENSE COUNCIL, INC.,
Plaintiffs.

v.

HOLTRACHEM MANUFACTURING COMPANY, LLC, and
MALLINCKRODT, INC.,
Defendants.

Gene Carter, *Senior District Judge.*

ORDER FOR ADDITIONAL FUNDS FOR THE STUDY OF THE PENOBSCOT RIVER

The Court ORDERS that Defendant Mallinckrodt, Inc. deposit into the registry of this Court, on or before August 15, 2005, a check made payable to "Clerk, U.S. District Court" in the amount of Two Hundred Thousand Dollars ($200,000.00) to be deposited into a separate account designated "The Penobscot River Study Panel Fund" and to be utilized for the funding of the Study Panel for the Penobscot River. Once deposited, such funds are to be drawn only on written order of the Court.

/s/Gene Carter
GENE CARTER
Senior District Court Judge

Dated at Portland, Maine this 29th day of July, 2005.

APPENDIX D

UNITED STATES DISTRICT COURT
D. MAINE

No. CIV. 00-69-B-C.

MAINE PEOPLE'S ALLIANCE and
NATURAL RESOURCES DEFENSE COUNCIL, INC.,
Plaintiffs,

v.

HOLTRACHEM MANUFACTURING COMPANY, LLC and
MALLINCKRODT INC.,
Defendants.

July 29, 2002

MEMORANDUM OF DECISION AND ORDER

GENE CARTER, *District Judge*.

"When dealing with any non-linear system, especially a complex one, you can't just think in terms of parts or aspects and just add things up and say that the behavior of this and the behavior of that, added together, makes the whole thing. With a complex non-linear system you have to break it up into pieces and then study each aspect, and then study the very strong interaction between them all. Only [in] this way can you describe the whole system."

> —Murray Gell-Mann, Nobel Laureate, quoted in T.L. Friedman, THE LEXUS AND THE OLIVE TREE, Anchor Books (2000).

The Maine People's Alliance ("MPA") and the Natural Resources Defense Council, Inc. ("NRDC") have brought this citizen suit under 42 U.S.C. § 6972(a)(1)(B) of the Resource Conservation and Recovery Act ("RCRA"). Responsibility

for the implementation and enforcement of RCRA rests principally with the Administrator of the Environmental Protection Agency ("EPA"), 42 U.S.C. §§ 6903(1), 6928, 6973, but the statute also contains a citizen suit provision, which permits private citizens to enforce its provisions in some circumstances. *See* 42 U.S.C. § 6972. In this case, the remaining Defendant Mallinckrodt Inc., formerly owned and operated a chemical manufacturing facility in Orrington, Maine ("the facility" or "the plant"). The parties have stipulated that the plant, under the ownership of Mallinckrodt and subsequently of others, discharged mercury directly into the Penobscot River and released mercury-tainted air emissions. Mallinckrodt is involved in an ongoing regulatory process with the EPA and the Maine Department of Environmental Protection ("MDEP") that is aimed at addressing mercury contamination stemming from the plant site. Though it is anticipated in some quarters that this process will generate a remediation plan for the plant site and an area of the Penobscot River adjacent to the plant known as "the southern cove," as of trial no "media protection standards" were finalized from that undertaking. Mallinckrodt has agreed, however, to take certain steps to remediate the plant site as well as the southern cove. The remediation plan being considered does not address the Penobscot River south of the plant. Tr. 2A at 17.

At trial, the evidence focused on the status of the Penobscot River south of the plant and the upper Penobscot Bay ("downriver"). Plaintiffs assert that mercury-containing water discharge and air emissions from the plant, under Mallinckrodt's ownership, have contaminated the lower Penobscot River, creating an imminent and substantial endangerment to the health and environment. Plaintiffs seek injunctive relief, in the form of an order requiring that Mallinckrodt undertake an independent scientific study of mercury contamination in that portion of the Penobscot downriver of the plant and to develop and implement a remediation plan. *See*

42 U.S.C. § 6972(a) (authorizing district courts "to restrain any person who has contributed or who is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste . . . , to order such person to take such other action as may be necessary, or both."); *see also Meghrig v. KFC Western, Inc.*, 516 U.S. 479, 116 S.Ct. 1251, 134 L.Ed.2d 121 (1996).

I. FACTS

The following facts are either stipulated by the parties or found by the Court based on the evidence presented at trial.

A. The Ownership History of the Plant

The chlor-alkali plant in Orrington, Maine that is the subject of this action was built in 1967. *See* Joint Ex. 65 ¶ 1. From December 9, 1967 to April 30, 1982, Mallinckrodt Inc., or one of its affiliates (collectively "Mallinckrodt") owned and operated the plant and the 240-acre site on which it is located on the banks of the Penobscot River. *See* Joint Ex. 65 ¶ 1. Mallinckrodt Inc., then known as International Minerals and Chemical Corporation ("IMC"), was the first entity to own the plant.[1] *See* Joint Ex. 65 ¶ 1. From 1982 to 1994, the plant was owned and operated by Hanlin Group, Inc. ("Hanlin") (d/b/a LCP Chemicals and Plastics, Inc.). *See* Joint Ex. 65 ¶ 3. In 1991, Hanlin and its related companies filed a voluntary bankruptcy petition pursuant to Chapter 11 of the Bankruptcy Code.[2] *See* Joint Ex. 65 ¶ 3. Defendant HoltraChem Manufacturing Company, LLC. ("HoltraChem") owned and operated the plant from 1994 until the plant ceased operation in September 2000.[3] *See* Joint Ex. 65 ¶ 4.

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[1] Sobin Chlor-Alkali was an affiliate of IMC. IMC changed its name to IMCERA Group Inc. in 1990 to Mallinckrodt Group Inc. in 1994, and to Mallinckrodt Inc. in 1996. *See* Joint Ex. 65 ¶ 1.

[2] Hanlin is not a Defendant in this action. *See* Joint Ex. 65 ¶ 3.

[3] HoltraChem continues to own the plant, but dissolved as a corporate entity in March 2001. *See* Joint Ex. 65 ¶ 4. Since that time, HoltraChem

B. Mercury Releases During Mallinckrodt's Ownership of the Plant

The plant began operation on December 9, 1967. *See* Joint Ex. 64 ¶ 1. Peter DeAngelis was responsible for operation of the plant from its start up through April 30, 1982, the full period of Mallinckrodt's ownership and operation of the plant. *See* Joint Ex. 64 ¶ 1. The facility production process utilized mercury; there were approximately 82 tons of mercury on site at any one time. *See* Joint Ex. 64 ¶ 2. Mercury losses from the facility from December 1967 into June 1970 were a major economic concern for the plant. *See* Joint Ex. 64 ¶ 3. Mr. DeAngelis directed A.L. MacMillan, a plant employee, to estimate mercury losses from the facility. *See* Joint Ex. 64 ¶ 3. Mr. MacMillan prepared a memorandum dated March 18, 1970, estimating average daily mercury production losses at 107 pounds, including 19 pounds of mercury daily lost through brine sludge, an unknown quantity of which was recycled back into the system.[4] *See* Joint Ex. 64 ¶ 3.

The plant sent mercury-contaminated brine sludge into its sewer, then through the facility's outfall directly into the Penobscot River, every day, continuously, from December 9, 1967, into June 1970. *See* Joint Ex. 64 ¶ 4. The plant did not attempt to estimate mercury concentration in brine sludge from 1967 to 1982, and, although Mr. DeAngelis is unaware

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has neither defended itself in this action nor participated in ongoing corrective action activities under the 1993 Consent Decree. *See* Joint Ex. 65 ¶ 4; Joint Ex. 8. The Clerk of this Court has entered a default order against HoltraChem in this action on February 5, 2002. *See* Docket No. 69; Joint Ex. 65 ¶ 4. On February 18, 2002, the Court reserved ruling on Plaintiffs' Motion for Default Judgment Against HoltraChem Manufacturing. *See* Endorsement Docket No. 44.

[4] Mr. DeAngelis does not have a basis for a more accurate estimate than the one set forth in the MacMillan memorandum, but disputes that the total amount was lost from the facility. *See* Joint Ex. 64 ¶ 3.

of information about mercury concentration in the facility's brine from 1967 to 1982, mercury discharges declined over time. *See* Joint Ex. 64 ¶ 4.

The State of Maine did not know from December 1967 into June of 1970 that the facility was discharging mercury to the Penobscot River. *See* Joint Ex. 64 ¶ 5. The facility did not state on its application for a waste discharge license that it was discharging mercury, because the facility first became aware of laboratory results showing mercury in its effluent in April 1970. *See* Joint Ex. 64 ¶ 5. Mallinckrodt constructed Mac's Pond, the first landfill on the site, around June 15, 1970. Mac's Pond was located on a downgrade between the facility and the Penobscot River. *See* Joint Ex. 64 ¶ 7. Until the creation of Hickel's Pond in July 1970, the facility put brine sludge in Mac's Pond, which was open and unlined. *See* Joint Ex. 64 ¶ 7. Mr. DeAngelis believes that the plant's own estimate of 1.5 to 2.5 pounds of mercury per day in the effluent discharged through the facility's outfall is fairly accurate for the period from the plant's startup to the construction of Mac's Pond, based on the April 1970 laboratory results. *See* Joint Ex. 64 ¶ 6. However, this estimate does not include mercury discharged through air emissions or groundwater and Mallinckrodt admits that more mercury was discharged from the through air emissions than through the facility outfall. *See* Joint Ex. 64 ¶ 6.

On July 27, 1970, the United States brought an action against Mallinckrodt.[5] *See* Joint Ex. 64 ¶ 8. The complaint alleged that effluent waste daily and continuously discharged to the Penobscot River "contain[ed] significant quantities of mercury or mercury compounds suspended in solution."[6] *See*

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[5] The complaint was amended on August 21, 1970. *See* Joint Ex. 64 ¶ 8.

[6] Mr. DeAngelis had no information with which to dispute those allegations. *See* Joint Ex. 64 ¶ 8.

Joint Ex. 64 ¶ 8. In response to the federal suit, in July 1970 the facility constructed Hickel's Pond to divert process waste. *See* Joint Ex. 64 ¶ 9. Hickel's Pond, which was later lined, was located close to the Penobscot River, on a down slope from the plant buildings. *See* Joint Ex. 64 ¶ 9. Starting in late August 1970, the United States and the facility both took samples of sediment from the Penobscot River near the plant outfall, including one set that Mr. DeAngelis took himself. *See* Joint Ex. 64 ¶ 10. These were the first sediment samples that the plant took in the Penobscot River.[7] *See* Joint Ex. 64 ¶ 10.

Following an EPA request that the facility remove mercury deposits from the Penobscot River near the site, T.W. Beak, one of Mallinckrodt's consultants, issued a report dated March 21, 1972, recommending no sediment removal, but proposing an environmental mercury survey for the summer of 1972. *See* Joint Ex. 64 ¶ 11. In a May 23, 1972, letter from Mr. DeAngelis to T.W. Beak, Mr. DeAngelis wrote that the facility would take periodic river, fish, and sediment samples and would keep the results on file. *See* Joint Ex. 64 ¶ 12. To his knowledge, the facility did not do any further such sampling.[8] *See* Joint Ex. 64 ¶ 12.

C. Federal Enforcement During Hanlin's Ownership of the Plant

EPA filed a RCRA administrative action against Hanlin in 1986 that resulted in a consent agreement that same year ("1986 Agreement"). *See* Joint Ex. 65 ¶ 6. In 1989, Hanlin brought an action against Mallinckrodt in this Court, alleging

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[7] Sometime during 1970, Mr. DeAngelis became aware of fish analysis results from the Saint Clair River downstream from a chlor-alkali plant that showed extremely high levels of mercury in the fish there. *See* Joint Ex. 64 ¶ 13.

[8] Mr. DeAngelis would have been aware of such sampling, and he was unaware of any sample results on file. *See* Joint Ex. 64 ¶ 12.

that Mallinckrodt was responsible for the environmental hazards at the site that were the subject of EPA's 1986 action and seeking recovery for expenses related to compliance with the 1986 Agreement. *See* Joint Ex. 65 ¶ 7. The lawsuit by Hanlin resulted in a settlement on April 3, 1991 ("1991 Settlement"), pursuant to which Mallinckrodt assumed responsibility for a portion of the costs of completing the study under the 1986 Agreement. *See* Joint Ex. 65 ¶ 8; Joint Ex. 4. The 1991 Settlement did not resolve how the costs of corrective action would be shared. *See* Joint Ex. 65 ¶ 8; Joint Ex. 4. On July 29, 1991, EPA brought a RCRA action against Hanlin in this Court for failing to comply with the 1986 Agreement. *See* Joint Ex. 65 ¶ 9. In 1993, this Court entered a Consent Decree between EPA and Hanlin that superseded the 1986 Agreement and required Hanlin to conduct a site investigation and corrective measures study at the site under the corrective action provisions of RCRA ("1993 Consent Decree"). *See* Joint Ex. 65 ¶ 10; Joint Ex. 8.

In 1994, when HoltraChem bought the plant, it assumed Hanlin's obligations under the 1993 Consent Decree and the 1991 Settlement. *See* Joint Ex. 65 ¶ 11. In 1995, following the bankruptcy of Hanlin and HoltraChem's acquisition of the plant, the 1993 Consent Decree was modified to reflect that certain obligations under the 1993 Consent Decree were assumed by HoltraChem. *See* Joint Ex. 65 ¶ 12; Defendant's Exs. 84, 85. Among other things, HoltraChem assumed Hanlin's obligations to complete the RCRA corrective action process. *See* Joint Ex. 65 ¶ 12; Defendant's Exs. 84, 85. The 1993 Consent Decree contemplates a three-phase process: site investigation, a study of possible corrective measures, and remediation. *See* Joint Ex. 65 ¶ 13. The RCRA corrective action process for the plant site is nearing the end of the first phase. *See* Joint Ex. 65 ¶ 13. Although the State of Maine is not a signatory to the 1993 Consent Decree, the MDEP has worked closely with the EPA in commenting on and overseeing work performed under the decree. *See* Joint

Ex. 65 ¶ 14. A 1997 Memorandum of Agreement between EPA and MDEP provides that EPA will continue to administer the 1993 Consent Decree, with "considerable" State input, until the corrective measures study phase is complete. *See* Joint Ex. 65 ¶ 14; Plaintiffs' Ex. 186.

Pursuant to the 1993 Consent Decree, Mallinckrodt and HoltraChem submitted a multi-volume Site Investigation Report in December 1995 prepared by environmental consultant Camp, Dresser & McKee ("CDM"). *See* Joint Ex. 65 ¶ 15; Joint Ex. 13. In March 1997, EPA and MDEP issued a draft notice of disapproval and comments on the 1995 Site Investigation Report. *See* Joint Ex. 65 ¶ 16; Defendant's Ex. 104. In December 1998, Mallinckrodt and HoltraChem again submitted a multi-volume Supplemental Site Investigation Report prepared by CDM. *See* Joint Ex. 65 ¶ 17; Joint Ex. 24. On April 10, 2000, EPA and MDEP provided a notice of disapproval along with comments on the 1998 Supplemental Site Investigation Report and Proposed Media Protection Standards. *See* Joint Ex. 65 ¶ 18; Joint Ex. 29. Throughout the site investigation process, MDEA and EPA asked for and recommended that Mallinckrodt collect data from downriver areas to determine whether mercury was methylating and whether such methylation was having an adverse impact on the river south of the plant. *See* Tr. 2A at 81-82; Tr. 2B at 9-11; Tr. 3A at 53-54; Tr. 3C at 24; Tr. 5A at 34; Joint Ex. 29 at 3; Joint Ex. 89 at 9; Joint Exs. 35 and 36 at 1 and attachment at 1. Despite these requests, Mallinckrodt took very few steps to collect data bearing on the effects of mercury downriver of the plant.[9] The limited data collected related to determining the effects downriver included sampling killifish, commonly known as minnows, and two wildlife surveys. The testimony at trial clearly established that the ongoing RCRA corrective action does not contemplate any remediation for the lower

[9] Mallinckrodt's failure to undertake sampling at all trophic levels appears to have been by design. *See* Plaintiffs' Ex. 48.

river. The 1993 Consent Decree continues to govern the corrective action activities at the site. *See* Joint Ex. 65 ¶ 19.

D. Mercury in Aquatic Systems

Mercury from natural and man-made sources is released into the air, soil, and water. Over time, the ultimate depository for mercury is in the sediments of the earth's oceans, lakes, and rivers. *See* Def. Ex. 310 at 17. There, microorganisms convert the inorganic mercury to its organic form known as methylmercury. *See* Def. Ex. 310 at 17. When mercury is methylated through ingestion by microorganisms, a carbon atom is added onto the mercury atom. This additional atom is what converts mercury into methylmercury, allowing it to be readily accumulated in both animals and human beings. *See* Def. Ex. 533 at 4. Methylmercury is the element's most bioavailable, and most toxic, form of mercury. Tr. 1A at 33.

Once released from microorganisms, methylmercury rapidly diffuses, binding to proteins in aquatic biota. From there it marches up the food chain, amplifying in concentration, through a process known as biomagnification. *See* Def. Ex. 533 at 4. Smaller fish absorb the methylmercury from water as it passes over their gills and as they feed on methylmercury-tainted plankton. In turn, these fish are eaten by bigger fish, which is why the highest concentrations of methylmercury are found in fish at the top of the aquatic food chain. Also, the older the fish, the more time methylmercury has in which to accumulate. Large, predatory species like cormorants, osprey, and eagles contain more methylmercury in their tissues than smaller, nonpredatory fish species. It not only accumulates in the aquatic food chain but tends to concentrate strongly as it passes upward in the food chain. Thus, methylmercury concentrations in predator fish can be millions of times higher than those of the surrounding water. *See* Def. Ex 533 at 4. Mercury is the only metal known to biomagnify, and the health and environmental concerns about

its effects center on this unique property. *See* Tr. 1A at 32; Tr. 9 at 5-6; Tr. 7B at 20-21.

E. Effects of Mercury on Human Beings and Animals

Methylmercury is a highly toxic substance with a number of adverse health effects associated with its exposure in humans and animals. Methylmercury's effects are largely sublethal: Methylmercury may not kill an animal, but it will impair the animal's ability to reproduce. Tr. 1A at 24-25, 33; Tr. 9 at 5. Even at very low doses, mercury attacks the nervous system, the kidneys, the immune system, and the reproductive system. Tr. 1A at 24, 33. Methylmercury is classified as a developmental neurotoxicant, which causes harm to the human central nervous system and is "extremely toxic to the developing brain." *See* Joint Ex. 28 at 4; Tr. 4A at 9-10, 13-14. Low-dose prenatal methylmercury exposure from maternal consumption of fish or other seafood has been associated with neurotoxicity in children. The public is exposed to methylmercury principally through the consumption of contaminated fish. Once ingested, methylmercury is absorbed into the bloodstream and distributes to all tissues including the brain and developing fetus. *See* Joint Ex. 40 at 2-2; Tr. 4A at 10. In an adult, this mercury can take months to excrete; however, in the fetal brain, the mercury cannot be excreted. Tr. 4A at 11-12.

Credible testimony was given by Dr. Philippe Grandjean, Plaintiffs' expert, on the risk of adverse effects of methylmercury exposure. *See* Joint Ex. 28 at 8. Dr. Grandjean studied the effects of mercury exposure in women and children living in the Faroes Islands. The Faroes study determined that, even at low levels of exposure, methylmercury effects the development of the central nervous system including: (1) motor function deficits; (2) neuropsychological impairment to attention, language, visuospatial performance, and verbal and visuospatial memory; and (3) developmental delays corresponding to one to two months in development for each

doubling of exposure. *See* Tr. 4A at 14-15, 17-18; Joint Ex. 59. Methylmercury also causes damage to the cardiovascular system, including difficulty regulating heartbeat and blood pressure in children, *see* Joint Ex. 60, and heart disease and stroke in adults. *See* Joint Exs. 58, 63. Although the effects from exposure to methylmercury are significantly more pronounced in small children and developing fetuses, the damage from exposure to methylmercury is permanent in all populations. *See* Tr. 4A at 29-31.

The EPA has set the Reference Dose ("RfD") for consumption of methylmercury at 0.1 μg/kg body weight/day. Tr. 4A at 48-49. The RfD is EPA's estimate, within an order of magnitude, of a dose above which human health risks are presented. Tr. 4A at 50. The State of Maine bases fish consumption advisories on the EPA RfD and Dr. Grandjean's Faroes Island study. *See* Plaintiffs' Ex. 228 at 16-17. The health risks depend on the total consumption of methylmercury from all sources, including freshwater and ocean fish. *See* Tr. 4B at 10-12. The consumption of Penobscot fish like the eels sampled near the plant site in 1995 would expose an individual to a level of methylmercury above the RfD.[10] *See* Tr. 4B at 11-19; Joint Ex. 13 at Table 9-4 (Vol.II). A pregnant woman could not eat a single Penobscot fish in the measured range without endangering fetal health. *See* Tr. 4B at 18-19.

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[10] Indeed, Dr. Grandjean believed that the degree of endangerment is even greater because the RfD "err[s] on the side of fish consumption . . . not on the side of safety." *See* Tr. 4A at 54-55.

II. DISCUSSION

A. Resource Conservation and Recovery Act ("RCRA")

To successfully prosecute a RCRA claim under 42 U.S.C. § 6972(a)(1)(B), Plaintiffs must demonstrate that Mallinckrodt is a "person" who satisfies the following provision:

> any past or present generator, past or present transporter, or past or present owner or operator of a treatment, storage, or disposal facility, who has contributed or who is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste which may present an imminent and substantial endangerment to health or the environment.

42 U.S.C. § 6972(a)(1)(B). Mallinckrodt does not dispute that it is a "person" who released "solid waste" into the Penobscot River.[11] There is also no genuine dispute in the record that some mercury originating from the plant during Mallinckrodt's ownership has migrated downriver; that mercury is available for methylation downriver, Tr. 5A at 22-23; Tr. 9 at 6; that some mercury is methylating in sediments downriver, Tr. 7B at 95; that methylmercury once in the food web biomagnifies, Joint Ex. 533; or of the harmful effects of mercury on human beings or animals, Joint Ex. 28. The discrete issue, raised in this case, is whether mercury methylation is occurring downriver of the plant to such a degree that it may present a risk of imminent and substantial harm to health or the environment.

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[11] Mallinckrodt stipulated that it is a "person" against whom an action may be brought as defined in RCRA § 6903(15). *See* Joint Ex. 65 at 2. Mallinckrodt also stipulated that the mercury-bearing releases originating at the plant, during the time that Mallinckrodt owned the plant, are "solid waste" as defined in RCRA §§ 6903(5) and (27). *See* Joint Ex. 65 ¶ 5.

1. Imminent and Substantial Endangerment

Under § 6972(a) of RCRA, it is not necessary that Plaintiffs show that the contamination is harming, or will harm, health or the environment. A finding that an activity may present an imminent and substantial endangerment does not require a showing of actual harm. The term "endangerment" has been interpreted by courts to mean a threatened or potential harm. *See Dague v. City of Burlington*, 935 F.2d 1343, 1355-56 (2nd Cir.1991), *rev'd on other grounds*, 505 U.S. 557, 112 S.Ct. 2638, 120 L.Ed.2d 449 (1992); *United States v. Price*, 688 F.2d 204, 211 (3rd Cir.1982); *United States v. Waste Industries, Inc.*, 734 F.2d 159 (4th Cir.1984); *Ethyl Corp. v. Environmental Protection Agency*, 541 F.2d 1 (D.C.Cir.) (*en banc*), *cert. denied*, 426 U.S. 941, 96 S.Ct. 2662, 49 L.Ed.2d 394 (1976)(construing the term "will endanger" as used in the Clean Air Act); *Reserve Mining Company v. Environmental Protection Agency*, 514 F.2d 492, 528 (8th Cir.1975) (*en banc*) (construing the word "endangering" as used in the emergency powers provision of the Clean Water Act prior to 1970); *United States v. Vertac Chemical Corp.*, 489 F.Supp. 870, 885 (E.D.Ark.1980). The standard under § 6972(a) is in fact even more lenient than that, because injunctive relief is authorized when there *may* be a risk of harm, not just when there is a risk of harm. This sweeping provision indicates Congress's intent "to confer upon the courts the authority to grant affirmative equitable relief to the extent necessary to eliminate *any risk* posed by toxic wastes." *Dague*, 935 F.2d at 1355 (quoting *United States v. Price*, 688 F.2d at 213-14) (emphasis added in *Dague*).

An endangerment need not be an immediate one in order for it to be "imminent." An endangerment is "imminent" if factors giving rise to it are present, even though the harm may not be realized for some time. "A finding of 'imminency' does not require a showing that actual harm will occur

immediately so long as the risk of threatened harm is present." *Dague*, 935 F.2d at 1356; *see also Meghrig*, 516 U.S. at 486, 116 S.Ct. 1251, 134 L.Ed.2d 121 (quoting *Price v. United States Navy*, 39 F.3d 1011, 1019 (9th Cir.1994)). In *Meghrig*, the Supreme Court stated that "[a]n endangerment can only be 'imminent' if it 'threaten[s] to occur immediately,' . . . and the reference to waste which 'may present' imminent harm quite clearly excludes waste that no longer presents a danger." *Id.* at 485-86, 116 S.Ct. at 1255. The Court went on to state that although "there must be a threat which is present now, . . . the impact of the threat may not be felt until later." *Id.* at 486, 116 S.Ct. at 1255 (quoting *Price v. United States Navy*, 39 F.3d 1011, 1019 (9th Cir.1994)).

In terms of substantiality, Plaintiffs need not quantify the risk of harm in order to establish an endangerment. Courts asked to decide whether RCRA has been violated often employ nondefinitive data in assessing the risk posed by the waste. That is because the evaluation of a risk of harm involves medical and scientific conclusions that "clearly lie on the frontiers of scientific knowledge", such that "proof with certainty is impossible." *Reserve Mining*, 514 F.2d at 519-20 (internal quotations and citations omitted). The *Reserve Mining* case involved a question of whether the discharge of a substance which, "under an acceptable but unproved medical theory may be considered carcinogenic," into Lake Superior was "'endangering the health or welfare of persons'" and thus was subject to abatement under the Clean Water Act. *Id.* at 529. In determining that injunctive relief was appropriate, the Court reasoned as follows:

> In assessing probabilities in this case, it cannot be said that the probability of harm is more likely than not. Moreover, the level of probability does not readily convert into a prediction of consequences. On this record it cannot be forecast that the rates of cancer will increase from drinking Lake Superior water or breathing

> Silver Bay air. The best that can be said is that the existence of this asbestos contaminant in air and water gives rise to a reasonable medical concern for the public health.

Id. at 520. An endangerment is "substantial," therefore, "if there is some reasonable cause for concern that someone or something may be exposed to risk or harm . . . if remedial action is not taken." *Raymond K. Hoxsie Real Estate Trust v. Exxon Educ. Fdn.*, 81 F.Supp.2d 359, 366 (D.R.I.2000) (citations omitted). Courts will not find that an imminent and substantial endangerment exists "if the risk of harm is remote in time, completely speculative in nature, or de minimis in degree." *United States v. Reilly Tar & Chem. Corp.*, 546 F.Supp. 1100, 1109 (D.Minn.1982).

Mallinckrodt asserts that there is no evidence of an imminent and substantial endangerment in the Penobscot River. Plaintiffs respond that people and animals ingesting mercury-laden fish and bivalves from the Penobscot River may be exposed to dangerous levels of the metal. The Court will review some of the evidence presented at trial to determine whether a risk of injury to the public health or the environment as a result of mercury downriver is sufficiently likely.

2. Evidence of Biomagnification of Mercury Downriver[12]

a. Sediments

The National Oceanic and Atmospheric Administration ("NOAA") has established guidelines for sediment mercury

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[12] The parties provided a great deal of additional information at trial not addressed in this opinion. Although all of the evidence was useful to the Court, much of it was not directly related on the question of whether methylmercury is being produced downriver in such sufficient degree that it would be harmful to health or the environment. For instance, the concentrations of mercury found in eels sampled from the plant site, although probative on the health effects of consuming mercury contaminated sea food, was not germane to methylation downriver.

concentrations of 0.15 parts per million ("ppm") as the effects range low ("ER-L") and 0.71 ppm as the effects range median ("ER-M"). *See* Joint Ex. 15 at 32. Sediment mercury concentrations below the ER-L denote that the adverse effects on sediment-dwelling organisms may be observed infrequently. *See* Joint Ex. 41 at 9. Sediment mercury concentrations above the ER-M denote that adverse effects among sediment-dwelling organisms would frequently be observed.[13] *See* Joint Ex. 41 at 9. Sediment mercury concentrations between the ER-L and the ER-M indicate that there may be effects to the biota resulting from the mercury present. *See* Tr. 1A at 16-17. The 1999 study by Dr. Livingston and the 2000 study by CDM showed sediment mercury concentrations in the lower Penobscot River exceeding the ER-M established by NOAA. *See* Joint Ex. 44 at 14; Joint Ex. 42 App. C-1. Dr. Livingston's data showed sediment mercury concentrations exceeded a NOAA's ER-L at four of the five Frankfort Flats subtidal stations he sampled. *See* Plaintiffs' Ex. 159. All five Frankfort Flats intertidal samples exceeded ER-M. *See* Plaintiffs' Ex. 159. At Fort Point Cove, all five subtidal stations exceeded ER-L and two of the intertidal stations exceeded the ER-L. *See* Plaintiffs' Ex. 159. In one sample of Frankfort Flats sediment, Dr. Livingston found mercury levels exceeded 4.6 ppm. *See* Joint Ex. 44; Plaintiffs' Exs. 150A and 151. CDM's study also found concentrations exceeding NOAA

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[13] Mercury sediment concentrations exceeding the ER-M does not, alone, demonstrate an adverse biological impact, but there is a 42.3% chance of adverse effects. *See* Joint Ex. 15 at 32; Tr. 1A at 16-17; Tr. 6B at 85-86. The Court notes that studies show that there was a "low accuracy of the ER-L and ER-M mercury guidelines in predicting adverse effects compared to [ ] other metals." Joint Ex. 15 at 33. For NOAA, this imprecision "highlight[ed] the need for site-specific effects-based data for determining sediment mercury concentrations that are a threat to aquatic biota." *Id.*

effects ranges in nearly all samples from Frankfort Flats and Fort Point Cove. *See* Joint Ex. 42 App. C-1.

These mercury concentrations rank among the highest in Maine, and Maine mercury concentrations are on the upper end of mercury concentrations found elsewhere in the United States. *See* Joint Ex. 41 at 18-19; Tr. 9 at 6, 44-45. On average, the amounts of mercury in downriver Penobscot sediments were five times higher than those measured in the Kennebec River. *See* Joint Ex. 41 Table A-3b; Joint Ex. 42 Figs. 15, 16; Tr. 6B at 80; Tr. 4C at 57. Recognizing that the mere presence of mercury contaminated sediments is alone not enough to constitute an imminent and substantial endangerment, the Court will consider other evidence presented by the parties on the issue of endangerment to health and the environment.

b. Benthos

Benthos are microorganisms that live on or near the river bottom. Benthos play a very important role in aquatic systems by producing food for organisms that live in the system. *See* Tr. 1B at 67. Toxicity tests on Penobscot River benthos conducted by CDM showed impaired growth and reproduction at many of the downriver stations of Frankfort Flats and Fort Point Cove. *See* Plaintiff's Ex. 159; Joint 42 at 35 and App. D. All of the Frankfort Flats subtidal stations showed significant reductions in growth compared with a laboratory control. *See* Plaintiffs' Ex. 159; Joint Ex. 42 App. D-2. In general, Penobscot sediments did not exceed NOAA effects levels for other pollutants. *See* Joint Ex. 42 at 27. The data demonstrating the high levels of sediment mercury combined with the data on growth and reproduction of benthos indicate that mercury may be responsible for the observed toxicity. *See* Tr. 9 at 14; Joint Ex. 15 at 36; Tr. 6B at 85-86.

c. Killifish

Killifish samples were taken from ten stations in the Penobscot River. Killifish is an omnivore, which occupies a low tropic level and feeds in the water column. *See* Joint Ex. 42 App. A-4. Eight of the ten stations sampled were either upriver of the plant or within two miles downriver of the plant. The locations of these eight sampling stations make the data gained from them of very limited value in terms of determining what is happening downriver. Likewise, the ultimate data gained from combining the ten killifish samples is not useful for reaching conclusions about what is occurring downriver. Of the ten stations where killifish sampled, the two downriver depositional stations—Frankfort Flats and Fort Point Cove—provide probative data to the question presented in this case. *See* Joint Ex. 42 App. A-4. Mercury concentrations in killifish tissue at Frankfort Flats and Fort Point Cove were significantly higher and, in most instances twice as high, as killifish samples taken from the Kennebec River or the killifish samples taken from the river in the area of the plant site. *See* Joint Ex. 42 App. A-4. Frankfort Flats and Fort Point Cove also had correspondingly high concentrations of mercury in the sediment. *See* Joint Ex. 42 App. A-4. According to the biomagnification figure published by the MDEP, a predator fish, such as a bass, feeding off killifish in Frankfort Flats would accumulate methylmercury to a concentration of 12.5 ppm. *See* Defendant's Ex. 533 at 5; Tr. 5A at 32-33. Consumption of a bass containing that much methylmercury would be hazardous to higher-order predators, including human beings. *See* Tr. 5A at 33.

d. Lobsters

In 1995 and 1996, tests were conducted on lobster meat and lobster hepatopancreas, or tomalley, from locations in the Penobscot River. The data suggest that mercury in the meat of lobsters is low relative to lobster in other areas of the state. *See* Joint Ex. 41. However, the data reveal high mercury

concentrations in Penobscot lobster tomalley. *See* Joint Ex. 41 at 21. In 1995, the tomalley from the sample of lobsters collected from Verona Island had the second highest mean concentrations of all the areas sampled in Maine, and, in 1996, the highest mean concentrations were found in Fort Point Cove. *See* Joint Ex. 41 at 21; Plaintiffs' Ex. 149; Defendant's Ex. 363. Lobster tomalley is eaten by predators, including human beings. *See* Tr. 1B at 28; Tr. 9 at 32-33.

e. Blue Mussels

Blue mussels in the upper Penobscot Bay were tested for mercury.[14] MDEP testing found concentrations of 0.65 ppm in mussels from Sandy Point and tests conducted by Dr. Livingston on samples from upper Penobscot Bay showed mean mercury concentrations of 0.56 ppm. *See* Joint Ex. 41 at 20; Joint Ex. 5 at 7. These levels were above background levels and the second highest among the areas studied. *See* Tr. 3C at 12, 15-17; Joint Ex. 5 at 7. Mussel samples taken from near Pickering Island in Penobscot Bay contained higher concentrations than did samples from other areas tested. *See* Joint Ex. 360 at 2; Tr. 7A at 23. Overall, the Penobscot Bay blue mussel mercury concentrations are among "the higher levels reported for mussels from Maine estuaries that drain urban and industrial areas," Joint Ex. 41 at 20, and very high compared with mussels elsewhere in Maine and the United States. *See* Tr. 1C at 17-20. These levels are of concern not only because of the threat of biomagnification occurring in higher order animal predators, but because of the large number of blue mussels harvested each year for human consumption. *See* Tr. 9 at 37-39; Tr. 1C at 17-18; Plaintiffs' Ex. 132 at 51, App. C.

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[14] The Penobscot River was not tested for blue mussel mercury concentrations because the mussels do not live in the river north of Sandy Point.

f. Cormorants

Cormorants are piscivorous birds that consume fish from the Penobscot River. Penobscot cormorant blood and feathers were tested to determine mercury concentrations. The cormorant data are the only actual mercury measurements from the top of the Penobscot food web. *See* Tr. 9 at 44. MDEP tested ten cormorant chicks at each of eight stations along the Maine coast. The results showed a decreasing gradient in feathers and blood mercury concentrations from west to east, with one anomalously high level of mercury in the cormorants located near Flat Island in Penobscot Bay. *See* Joint Ex. 41 at 24. Indeed, the sample from Flat Island registered the highest levels of mercury in cormorants measured in Maine. *See* Joint Ex. 41 at 24. The available data suggests that cormorants consuming fish from the Penobscot estuary have greater exposure to mercury than do birds that feed in other Maine estuaries and that mercury may reach potentially unsafe levels in some species of piscivorous birds feeding and nesting in the Penobscot estuary. *See* Tr. 4C at 10-11.

g. Osprey and Eagles

Ospreys and eagles, like cormorants, are piscivorous birds at the top of the Penobscot estuary food web. CDM commissioned a wildlife survey to determine, among other things, the breeding success rate of osprey along the Penobscot. A partial wildlife survey was conducted for the latter part of the 2000 season, and another survey was conducted during the 2001 season. The 2000 survey results are not conclusive of breeding success because the observations took place only in the latter part of the season with no determination of how many nests failed. *See* Tr. 2C at 28, 66; Tr. 7A at 49-50; Defendant's Ex. 52 at 144-47; Tr. 7B at 23. The 2001 survey demonstrated a breeding success rate of 0.67 for osprey,

below a level necessary to sustain the population.[15] *See* Plaintiffs' Ex. 200; Joint Ex. 50 at 4-6, 15-18, Table 4, Table 5. In addition, the Penobscot osprey breeding success rate for 2001 was less than half of that observed on the Kennebec River. *See* Plaintiffs' Ex. 200; Defendant's Ex. 52 at 144-47. The 2001 wildlife survey demonstrated that eagles nesting in the Penobscot estuary at a level barely necessary to sustain the population. *See* Plaintiff's Ex. 200. No blood and feather data were collected from the birds as part of either survey. Nevertheless, because mercury can impair reproduction the breeding success of osprey and eagles is possibly reflective of the harm caused by mercury on birds at the top of the food web as well as another indicator of the overall health of the ecosystem. *See* Tr. 7A at 51; Joint Ex. 42 at 2; Tr. 9 at 49.

h. Verona Island

During both July and August of 2000, Mallinckrodt's wildlife survey concluded that there was an unexpectedly limited amount of wildlife activity on the east side of Verona Island, in the lower river. *See* Tr. 2C at 41-42; Joint Ex. 42 Appendix F at 10. Along a stretch of approximately three miles, the survey observed no cormorants or other water birds on the water, no shore birds on the flats, and few shoreline plants, fish, or shellfish. *See* Tr. 2C at 43-46, 48; Tr. 7A at 58-60; Joint Ex. 42 App. F at 10; Joint Ex. 50 at 12. No other stretch along the Penobscot River had so little wildlife activity. *See* Tr. 2C at 52. The inactivity was unexpected, in part, because the area is designated as a Class A habitat by the State of Maine—an area of significance to wildlife. Tr. 2C at 46-48. While the inactivity "was not as pronounced in 2001," the area was less active than a comparable habitat in the Kennebec River. Tr. 3A at 7-9; Joint Ex. 50 at 12.

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[15] The results of the 2001 wildlife survey were not disclosed to MDEP, EPA, or others until sometime after trial began in this case. *See* Tr. 3B at 61; Tr. 4C at 49; Tr. 6A at 111-12; Tr. 7A at 56-57.

Dr. Livingston concluded that the significance of the Verona Island observations is "another signal that something is going on that is possibly related to the mercury distribution in the system." Tr. 9 at 51.

3. Conclusion

After hearing the testimony at trial and carefully reviewing the exhibits admitted in evidence, the Court concludes that the methylmercury downriver of the plant, resulting, in part, from Mallinckrodt's actions at the plant site, may present an imminent and substantial endangerment to public health and the environment. *See* Tr. 3C at 36-37; Tr. 4B at 13-14. The Court found the testimony of Dr. Robert Livingston, Plaintiffs' aquatic biologist, particularly credible and persuasive. The evidence clearly demonstrated that the Penobscot River is contaminated with mercury through the mouth of the River and into the Bay. *See* Tr. 4B at 52-53. Reliable evidence further established that mercury levels are elevated in Penobscot downriver sediments, Joint Exs. 42 App. C-1, 44, that mercury is methylating downriver, Tr. 7B at 95, and that such methylmercury is bioavailable, entering biota, and biomagnifying throughout the food web. *See* Joint Ex. 29 at 17; Joint Ex. 32 at 1. As a result, dangerously high levels of mercury may be present in Penobscot fish and other sea food consumed by the public. These elevated body burdens of mercury may also present an imminent and substantial endangerment to the environment.

The scientific literature concerning the effects of mercury in an aquatic system teaches that methylation is a continuous process that can go on for decades or longer, creating the most severe adverse impacts downstream from the original mercury source. *See* Plaintiffs' Ex. 32; Tr. 1A at 47; Tr. 1B at 3-6; Tr. 9 at 53-54. The greatest downstream danger is presented in areas where methylation occurs; it is methylmercury that bioconcentrates and biomagnifies. *See* Tr. 1B at 4-6; Tr. 9 at 10-12; Joint Ex. 15 at 11. Of particular

importance to the Court's conclusion is the data concerning the Frankfort Flats area, which receives drainage from a marsh system and may be the principal area where methylmercury is entering the Penobscot system. *See* Tr. 1C at 10; Tr. 7B at 108; Tr. 9 at 11-12. Frankfort Flats data showed the highest sediment mercury concentrations, sediment toxicity to benthos, and the highest concentrations of mercury in killifish. *See* Tr. 9 at 54. Birds that occupy higher trophic levels in the food web feed in the marsh areas near Frankfort Flats and the limited survey results demonstrated impaired reproduction of these birds. *See* Tr. 9 at 54.

Although the scientific literature reveals that the effects resulting from the methylmercury exposure are sublethal, they clearly endanger reproduction, development, and overall health of the public and the environment. Eliminating the source of mercury is insufficient to solve the problem because the mercury is already in the system and methylmercury is being generated in the sediments downriver. Tr. 1C at 32; Tr. 3C at 25-26. Downriver areas where mercury is methylating, such as marshes, will continue to supply methylmercury to the lower river unaffected by remediation at the site. Tr. 1B at 3-6; Tr. 1C at 32-33; Tr. 4C at 56-57; Tr. 3B at 15-16; Tr. 9 at 10-11, 70-71, 73-74. Consequently, this methylmercury continually accumulating and biomagnifying in the food web creates a reasonable medical concern for public health and a reasonable scientific concern for the environment downriver of the plant site. The Court will, therefore, order that Defendant Mallinckrodt be responsible for the cost of undertaking a scientific study of mercury contamination downriver of the plant site in the Penobscot River.

B. Standing

Having discussed the predicate facts, the Court will now address Mallinckrodt's standing arguments. MPA and the NRDC have brought this action on behalf of their members. In order for an organization to have standing to bring a

RCRA suit on behalf of its members, it is necessary to establish that: "(a) its members would otherwise have standing to sue in their own right; (b) the interests it seeks to protect are germane to the organization's purpose; and (c) neither the claim asserted nor the relief requested requires the participation of individual members in the lawsuit." *International Union, United Automobile, Aerospace & Agricultural Implement Workers v. Brock*, 477 U.S. 274, 282, 106 S.Ct. 2523, 2529, 91 L.Ed.2d 228 (1986) (quoting *Hunt v. Washington State Apple Advertising Comm'n*, 432 U.S. 333, 343, 97 S.Ct. 2434, 2441, 53 L.Ed.2d 383 (1977)). To fulfill the first prong of this test, demonstrating individual standing for the organization's members, Plaintiffs must show that (1) the individual has personally suffered an actual or threatened injury from the defendant's allegedly illegal conduct; (2) the injury may be fairly traced to this conduct; and (3) a favorable decision will redress the harm. *See Valley Forge Christian College v. Americans United for Separation of Church and State, Inc.*, 454 U.S. 464, 472, 102 S.Ct. 752, 758, 70 L.Ed.2d 700 (1982) (quotations and citations omitted).

Mallinckrodt challenges MPA and NRDC's standing, arguing that there is no connection between the members' injuries and the conduct of Mallinckrodt. Specifically, Mallinckrodt asserts that Plaintiffs do not have standing to sue because their injuries are not fairly traceable to its mercury discharges. Relying on the testimony of the individual members, Plaintiffs counter that there is a substantial likelihood that the members' injuries are fairly traceable to Mallinckrodt's conduct.

Discussing the fairly traceable prong, courts have held that plaintiffs need not prove to a scientific certainty that a defendant's waste caused the precise harm suffered by the plaintiffs. *See Public Interest Research Group of New Jersey, Inc. v. Powell Duffryn Terminals, Inc.*, 913 F.2d 64, 72 (3rd Cir.1990), *cert. denied*, 498 U.S. 1109, 111 S.Ct. 1018, 112

L.Ed.2d 1100 (1991) (discussing the Clean Water Act the court stated that the "likelihood may be established by showing that a defendant has 1) discharged some pollutant in concentrations greater than allowed by his permit, 2) into a waterway in which the plaintiffs have an interest that is or may be adversely affected by the pollutant, and that 3) this pollutant causes or contributes to the kinds of injuries alleged by the plaintiffs."). A plaintiff's injury is "fairly traceable" to the defendant's conduct when there is a "substantial likelihood" that the conduct caused the harm. *NRDC v. Texaco Ref. & Mktg., Inc.*, 2 F.3d 493, 505 (3rd Cir.1993)(citing *Powell Duffryn*, 913 F.2d at 72). Traceability "'does not mean that plaintiffs must show to a scientific certainty that defendant's effluent . . . caused the precise harm suffered by the plaintiffs.'" *Friends of the Earth, Inc. v. Gaston Copper Recycling Corp.*, 204 F.3d 149, 161 (4th Cir.2000) (quoting *NRDC v. Watkins*, 954 F.2d 974, 980 n. 7 (4th Cir.1992)). The "fairly traceable" standard is "not equivalent to a requirement of tort causation," a plaintiff "must merely show that a defendant discharges a pollutant that causes or contributes to the kinds of injuries alleged" in the area of concern. *Gaston Copper*, 204 F.3d at 161 (internal quotation marks and citation omitted).

At trial, Nancy Galland, Richard Judd, Jill Reymore, and Stephen Woods, members of MPA and/or the NRDC living on or near the Penobscot River, testified about the impact that the mercury in the river has on their lives. *See* Tr. 5A at 40, 56-57, 67, 73; Tr. 5B at 4, 9; Tr. 6A at 1-2, 11-12. All of these individuals testified that they do not eat fish or shellfish from the Penobscot River or Bay because they are concerned that the fish have dangerous levels of mercury that may harm their health. *See* Tr. 5A at 48-51, 69; Tr. 5B at 6-8; Tr. 6A at 6-7. They also refrain from fishing, swimming, or boating on the Penobscot because of the mercury contamination. *See* Tr. 5A at 48-50, 55-56, 69-71; Tr. 5B at 7-8; Tr. 6A at 5-7, 10. In addition, Ms. Galland testified that when she moved to

Stockton Springs she hoped to harvest blue mussels to supplement her income as well as her diet. *See* Tr. 5A at 47-48. After learning of the mercury present in the river, she has not followed through with those plans. *See* Tr. 5A at 47-48. Ms. Galland further testified that she feels "robbed, of my rights to use" the Penobscot River and Bay. *See* Tr. 5A at 58.

This testimony, coupled with the findings detailed above regarding the dangers of mercury deposited in the river by Mallinckrodt, establishes by a preponderance of evidence that the individual member Plaintiffs have suffered actual injury that is fairly traceable to Mallinckrodt's conduct. The parties stipulated that the plant under Mallinckrodt's ownership and operation was a source of tons of mercury-laden waste to the Penobscot River estuary. *See* Joint Ex. 64. Mercury released from the plant by Mallinckrodt has migrated downriver, where it is methylating and entering the food web. These injuries experienced by members of the MPA and the NRDC are fairly traceable to Mallinckrodt because there is a substantial likelihood that its conduct caused or, at the very least, is contributing to Plaintiffs' diminished use and enjoyment of the Penobscot River and Bay. *See Vermont Agency of Natural Res. v. United States ex rel. Stevens*, 529 U.S. 765, 771, 120 S.Ct. 1858, 146 L.Ed.2d 836 (2000).

Mallinckrodt also challenges the Plaintiffs' standing on the basis that it was not proven at trial that the requested relief—the proposed independent river study and remediation of the mercury—will redress their harms. Specifically, Mallinckrodt argues that the study may conclude that remediation of the lower river is unnecessary. A "reduced use of a waterway out of reasonable fear and concern of pollution," however, constitutes an injury in fact that may be redressed. *See Gaston Copper*, 204 F.3d at 159 (citing *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 181-84, 120 S.Ct. 693, 145 L.Ed.2d 610 (2000)). The individual members testified that they do not use the Penobscot in

various ways because they believe it to be contaminated with mercury. The individual members relied on multiple sources of information, including the MDEP, to support their conclusion about the safety of using the River or consuming the fish and shellfish in the River and Bay. Tr. 5A at 42, 44-46, 53-55, 67-69; Tr. 5B at 4-6; Tr. 6A at 3-4. If the proposed study is completed and establishes that the Penobscot River and Bay are safe to use, then the members' concerns will be redressed.

The Court also finds that Plaintiffs have satisfied the other two prongs of the organizational standing test. That is, the interests at stake in this litigation are germane to the purposes of MPA and NRDC as set forth in *Hunt v. Washington State Apple Adver. Comm'n.*, 432 U.S. at 343, 97 S.Ct. 2434. *See* Joint Ex. 65 ¶ 20. Finally, the relief MPA and NRDC seek does not require the individual participation of the organizations' members because Plaintiffs do not seek relief for any individual. *See* Complaint at prayer for relief ¶ 2; *see also Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. at 181, 120 S.Ct. 693, 145 L.Ed.2d 610. The Court finds, therefore, that the organizational Plaintiffs' have standing to bring their RCRA claims against Mallinckrodt.

C. Mallinckrodt's Affirmative Defenses

1. Primary Jurisdiction

This ground has been thoroughly ploughed before, and the Court will not burden the record further with another recitation of the applicable law. *See* Recommended Decision of December 14, 2001 (Docket No. 71), affirmed by Order of February 18, 2002 (Docket No. 91); Recommended Decision of November 1, 2000 (Docket No. 9), affirmed by Order of January 8, 2001 (Docket No. 18). Relying on Dr. Finkelstein's testimony at trial, Mallinckrodt now asserts that any cleanup effort in the lower river would "likely [be] technically unfeasible." Tr. 3B at 14. Plaintiffs disagree, point-

ing out that before the study is complete and informed remediation discussions occur, no one can guess what might be involved in, or result from, a cleanup.

The Court does not find that the opinion of a single agency employee on the potential for cleanup downriver is conclusive on the issue of primary jurisdiction. What is relevant to the primary jurisdiction inquiry is whether the actions of this Court are in conflict with any agency action. At this time, there is clearly no conflict between this Court's order requiring study of the lower river and any agency action. No agency proceedings have been initiated or orders issued regarding the remediation of mercury contamination downriver. There is a total absence of any evidence in this record indicating that any administrative agency is going to take an active interest in the lower Penobscot River anytime in the future. Moreover, this Court's decision ordering a downriver study places the case far from any remediation plan where agency determinations relative to the plant, or otherwise, may impact the remedial action that may ultimately be ordered by this Court with respect to downriver areas. Although primary jurisdiction concerns could arise in the future if the agencies decide that cleanup options for the lower river are impracticable or risky, the Court is not aware that any formal conclusion by an authorized agency has been reached.

2. Causation Defenses

Mallinckrodt's Answer raises two causation-based defenses: that Mallinckrodt was not the proximate, or legal, cause of Plaintiffs' injuries and that Plaintiffs' injuries result from the actions of third parties that constitute intervening and superseding causes. *See* Mallinckrodt's Answer (Docket No. 20) at 11-12. Specifically, Mallinckrodt argues that Plaintiffs failed to establish that the imminent and substantial endangerment was caused by its activities. Plaintiffs respond, asserting that Mallinckrodt contributed to the mercury waste

entering the Penobscot estuary and, thus, it is responsible for the harm suffered by Plaintiffs.

Under RCRA, Plaintiffs must establish only that Mallinckrodt released waste "of a type that could contribute to" the endangerment that may exist. *Prisco v. A & D Carting Corp.*, 168 F.3d 593, 609 (2nd Cir.1999). The stipulations of the parties and the evidence adduced at trial contradict Mallinckrodt's causation defenses. While some mercury in the Penobscot River derives from general atmospheric deposition, Penobscot sediments downriver of the plant contain, on average, five times the mercury concentrations of sediments in the Kennebec River. *See* Tr. 7B at 19. The evidence was clear that Mallinckrodt has been a dominant source of mercury in the Penobscot River. *See* Tr. 8A at 24-25; Tr. 3B at 26-29. The record is replete with evidence establishing that Mallinckrodt released mercury into the river that contributed to the endangerment. Thus, Mallinckrodt was a legal cause of the injury in this case. Moreover, where the cause of the endangerment is indivisible, as it is here, RCRA liability is joint and several. *See United States v. Conservation Chem. Co.*, 619 F.Supp. 162, 199 (W.D. Mo.1985). Therefore, the tort doctrine of intervening/superseding cause is also inapplicable to this case.

3. Laches

This Court has also previously addressed Mallinckrodt's arguments with respect to its laches defense. *See* Recommended Decision on Mallinckrodt's Motion for Summary Judgment on the Basis of Laches (Docket No. 70), affirmed by Order of February 18, 2002 (Docket No. 90). The arguments raised in Mallinckrodt's Post-Trial Brief are a rehash of the arguments already presented. *See* Mallinckrodt's Post-Trial Brief (Docket No. 138) at 47-48. No evidence presented at trial persuades the Court that its previously considered decision on the laches defense should be altered.

III. Conclusion

Accordingly, the Court FINDS that Mallinckrodt, Inc. has violated RCRA, 42 U.S.C. § 6972(a)(1)(B), with respect to the downriver portion of the Penobscot River south of the plant site and is liable to fund the cost of a necessary independent study to determine if remediation of the conditions existing in the area south of the plant in the Penobscot River is required and/or feasible and, if so, the precise content of the appropriate remediation plan. The Court ORDERS that the parties confer and make genuine, good-faith efforts to agree on a specific plan for an independent study to determine: (1) the extent of the existing harm to the Penobscot River and Bay south of the plant site, (2) the need for a remediation plan, if any, and (3) the elements of, and schedule for, completion of such a remediation plan. By August 30, 2002, the parties shall propose an order delineating the scope of the independent study, including a discrete time schedule for completion of all stages of the study. If the parties cannot agree, the Court ORDERS that each party submit its own proposed plan for such study by August 30, 2002. The Court will then consider the submissions, confer with counsel, hear oral argument and, if necessary, hold further evidentiary hearings on all questions so generated.

It is FURTHER ORDERED that Mallinckrodt's Rule 52(c) Motion for Judgment as a Matter of Law be, and it is hereby, DENIED.

The Court hereby ENTERS judgment against Defendant Holtrachem Manufacturing Company, LLC, on its default, to be jointly and severally liable with Defendant Mallinckrodt, Inc. for the funding of the independent study.

The Court retains jurisdiction of the case for the consideration and granting, as appropriate, of any further relief it finds necessary and appropriate.

APPENDIX E

UNITED STATES COURT OF APPEALS
FOR THE FIRST CIRCUIT

No.05-2331

MAINE PEOPLE'S ALLIANCE;
NATURAL RESOURCES DEFENSE COUNSEL, INC.
Plaintiffs - Appellees,

v.

HOLTRACHEM MANUFACTURING COMPANY, LLC
Defendant,

MALLINCKRODT INC.
Defendant – Appellant.

Before:

Boudin, *Chief Judge,*
Torruella, Selya, Howard, *Circuit Judges,*
Smith*, *District Judge.*

ORDER OF COURT

Entered: January 16, 2007

The petition for rehearing having been denied by the panel of judges who decided the case, and the petition for rehearing en banc having been submitted to the active judges of this court and a majority of the judges not having voted that the case be heard en banc, it is ordered that the petition for rehearing and the petition for rehearing en banc be *denied.*

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* Of the Rhode Island District Court, sitting by designation.

By the Court:
Richard Cushing Donovan, Clerk

By: /s/ Margeret Carter
MARGERET CARTER, Chief Deputy Clerk

[cc: Eric Uhl, Esq., Mitchell S. Bernard, Esq., Corinne Schiff, Esq., Nancy S. Marks, Esq., Lawrence M. Levine, Esq., Steven R. Guidry, Steven J. Mogul, Esq., J. Andrew Schlickman, Esq., Susan V. Harris, Esq., John M. Heyde, Esq., Joseph R. Guerra, Esq., Carter G. Phillips, Esq., R. Justin Smith, Esq.]

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APPENDIX F

FEDERAL STATUTES

42 U.S.C. § 6972. Citizen suits

(a) In general

Except as provided in subsection (b) or (c) of this section, any person may commence a civil action on his own behalf—

> (1)(A) against any person (including (a) the United States, and (b) any other governmental instrumentality or agency, to the extent permitted by the eleventh amendment to the Constitution) who is alleged to be in violation of any permit, standard, regulation, condition, requirement, prohibition, or order which has become effective pursuant to this chapter; or
>
> (B) against any person, including the United States and any other governmental instrumentality or agency, to the extent permitted by the eleventh amendment to the Constitution, and including any past or present generator, past or present transporter, or past or present owner or operator of a treatment, storage, or disposal facility, who has contributed or who is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste which may present an imminent and substantial endangerment to health or the environment; or
>
> (2) against the Administrator where there is alleged a failure of the Administrator to perform any act or duty under this chapter which is not discretionary with the Administrator.

Any action under paragraph (a)(1) of this subsection shall be brought in the district court for the district in which the alleged violation occurred or the alleged endangerment may occur. Any action brought under paragraph (a)(2) of this subsection may be brought in the district court for the district

in which the alleged violation occurred or in the District Court of the District of Columbia. The district court shall have jurisdiction, without regard to the amount in controversy or the citizenship of the parties, to enforce the permit, standard, regulation, condition, requirement, prohibition, or order, referred to in paragraph (1)(A), to restrain any person who has contributed or who is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste referred to in paragraph (1)(B), to order such person to take such other action as may be necessary, or both, or to order the Administrator to perform the act or duty referred to in paragraph (2), as the case may be, and to apply any appropriate civil penalties under section 6928(a) and (g) of this title.

(b) Actions prohibited

(1) No action may be commenced under subsection (a)(1)(A) of this section—

(A) prior to 60 days after the plaintiff has given notice of the violation to—

(i) the Administrator;

(ii) the State in which the alleged violation occurs; and

(iii) to any alleged violator of such permit, standard, regulation, condition, requirement, prohibition, or order,

except that such action may be brought immediately after such notification in the case of an action under this section respecting a violation of subchapter III of this chapter; or

(B) if the Administrator or State has commenced and is diligently prosecuting a civil or criminal action in a court of the United States or a State to require compliance

with such permit, standard, regulation, condition, requirement, prohibition, or order.

In any action under subsection (a)(1)(A) of this section in a court of the United States, any person may intervene as a matter of right.

(2)(A) No action may be commenced under subsection (a)(1)(B) of this section prior to ninety days after the plaintiff has given notice of the endangerment to—

(i) the Administrator;

(ii) the State in which the alleged endangerment may occur;

(iii) any person alleged to have contributed or to be contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste referred to in subsection (a)(1)(B) of this section,

except that such action may be brought immediately after such notification in the case of an action under this section respecting a violation of subchapter III of this chapter.

(B) No action may be commenced under subsection (a)(1)(B) of this section if the Administrator, in order to restrain or abate acts or conditions which may have contributed or are contributing to the activities which may present the alleged endangerment—

(i) has commenced and is diligently prosecuting an action under section 6973 of this title or under section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 [42 U.S.C. § 9606],[1]

(ii) is actually engaging in a removal action under section 104 of the Comprehensive Environmental Re-

[1] So in original. The comma probably should be a semicolon.

sponse, Compensation and Liability Act of 1980 [42 U.S.C. § 9604];

(iii) has incurred costs to initiate a Remedial Investigation and Feasibility Study under section 104 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 [42 U.S.C. § 9604] and is diligently proceeding with a remedial action under that Act [42 U.S.C. § 9601 et seq.]; or

(iv) has obtained a court order (including a consent decree) or issued an administrative order under section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 980[2] [42 U.S.C. § 9606] or section 6973 of this title pursuant to which a responsible party is diligently conducting a removal action, Remedial Investigation and Feasibility Study (RIFS), or proceeding with a remedial action.

In the case of an administrative order referred to in clause (iv), actions under subsection (a)(1)(B) of this section are prohibited only as to the scope and duration of the administrative order referred to in clause (iv).

(C) No action may be commenced under subsection (a)(1)(B) of this section if the State, in order to restrain or abate acts or conditions which may have contributed or are contributing to the activities which may present the alleged endangerment—

(i) has commenced and is diligently prosecuting an action under subsection (a)(1)(B) of this section;

(ii) is actually engaging in a removal action under section 104 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 [42 U.S.C. § 9604]; or

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[2] So in original. Probably should be "1980".

(iii) has incurred costs to initiate a Remedial Investigation and Feasibility Study under section 104 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 [42 U.S.C. § 9604] and is diligently proceeding with a remedial action under that Act [42 U.S.C.A. § 9601 et seq.].

(D) No action may be commenced under subsection (a)(1)(B) of this section by any person (other than a State or local government) with respect to the siting of a hazardous waste treatment, storage, or a disposal facility, nor to restrain or enjoin the issuance of a permit for such facility.

(E) In any action under subsection (a)(1)(B) of this section in a court of the United States, any person may intervene as a matter of right when the applicant claims an interest relating to the subject of the action and he is so situated that the disposition of the action may, as a practical matter, impair or impede his ability to protect that interest, unless the Administrator or the State shows that the applicant's interest is adequately represented by existing parties.

(F) Whenever any action is brought under subsection (a)(1)(B) of this section in a court of the United States, the plaintiff shall serve a copy of the complaint on the Attorney General of the United States and with the Administrator.

* * * *

42 U.S.C. § 6973. Imminent hazard

(a) Authority of Administrator

Notwithstanding any other provision of this chapter, upon receipt of evidence that the past or present handling, storage, treatment, transportation or disposal of any solid waste or hazardous waste may present an imminent and substantial endangerment to health or the environment, the Administrator may bring suit on behalf of the United States in the appropriate district court against any person (including any past or present generator, past or present transporter, or past or present owner or operator of a treatment, storage, or disposal facility) who has contributed or who is contributing to such handling, storage, treatment, transportation or disposal to restrain such person from such handling, storage, treatment, transportation, or disposal, to order such person to take such other action as may be necessary, or both. A transporter shall not be deemed to have contributed or to be contributing to such handling, storage, treatment, or disposal taking place after such solid waste or hazardous waste has left the possession or control of such transporter if the transportation of such waste was under a sole contractural[3] arrangement arising from a published tariff and acceptance for carriage by common carrier by rail and such transporter has exercised due care in the past or present handling, storage, treatment, transportation and disposal of such waste. The Administrator shall provide notice to the affected State of any such suit. The Administrator may also, after notice to the affected State, take other action under this section including, but not limited to, issuing such orders as may be necessary to protect public health and the environment.

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[3] So in original. Probably should be "contractual".

(b) Violations

Any person who willfully violates, or fails or refuses to comply with, any order of the Administrator under subsection (a) of this section may, in an action brought in the appropriate United States district court to enforce such order, be fined not more than $5,000 for each day in which such violation occurs or such failure to comply continues.

(c) Immediate notice

Upon receipt of information that there is hazardous waste at any site which has presented an imminent and substantial endangerment to human health or the environment, the Administrator shall provide immediate notice to the appropriate local government agencies. In addition, the Administrator shall require notice of such endangerment to be promptly posted at the site where the waste is located.

(d) Public participation in settlements

Whenever the United States or the Administrator proposes to covenant not to sue or to forbear from suit or to settle any claim arising under this section, notice, and opportunity for a public meeting in the affected area, and a reasonable opportunity to comment on the proposed settlement prior to its final entry shall be afforded to the public. The decision of the United States or the Administrator to enter into or not to enter into such Consent Decree, covenant or agreement shall not constitute a final agency action subject to judicial review under this chapter or chapter 7 of Title 5.